ECHNOLOGY DEPARTMENT

TEXTILE WORLD

A McGraw-Hill Publication ..... JANUARY • 1948

JAPANESE TEXTILES

Will Be Slow in Revival Page 101

MAN-and-MACHINE CHARTS

Page 108

JR v.98 Jan.-April 1948

A Complete Financial Service

COMMERCIAL FACTORS CORPORATION

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as second class matter August 29, 1936, at Post Office, Albany, N. Y

TECHNOLOGY DEPARTMENT

Right
Mr. Editor!
The Editor Reports:
By HARRY RIEMER
FALL RIVER, Mass. — Officials of the leading textile machinery manufacturers resent the implication that they are backward or that the industry is backward . . . While it is true the fundamental principles of spinning and weaving have not changed, a review of the past quarter century finds important changes and big changes in textile operations. For example, since many folks usually point to automobiles when discussing progress, the statement is made that actually during the past 25 years more has been done in textile machinery than in automobiles.
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DETROIT

Clipped from the Daily News Record

Progress

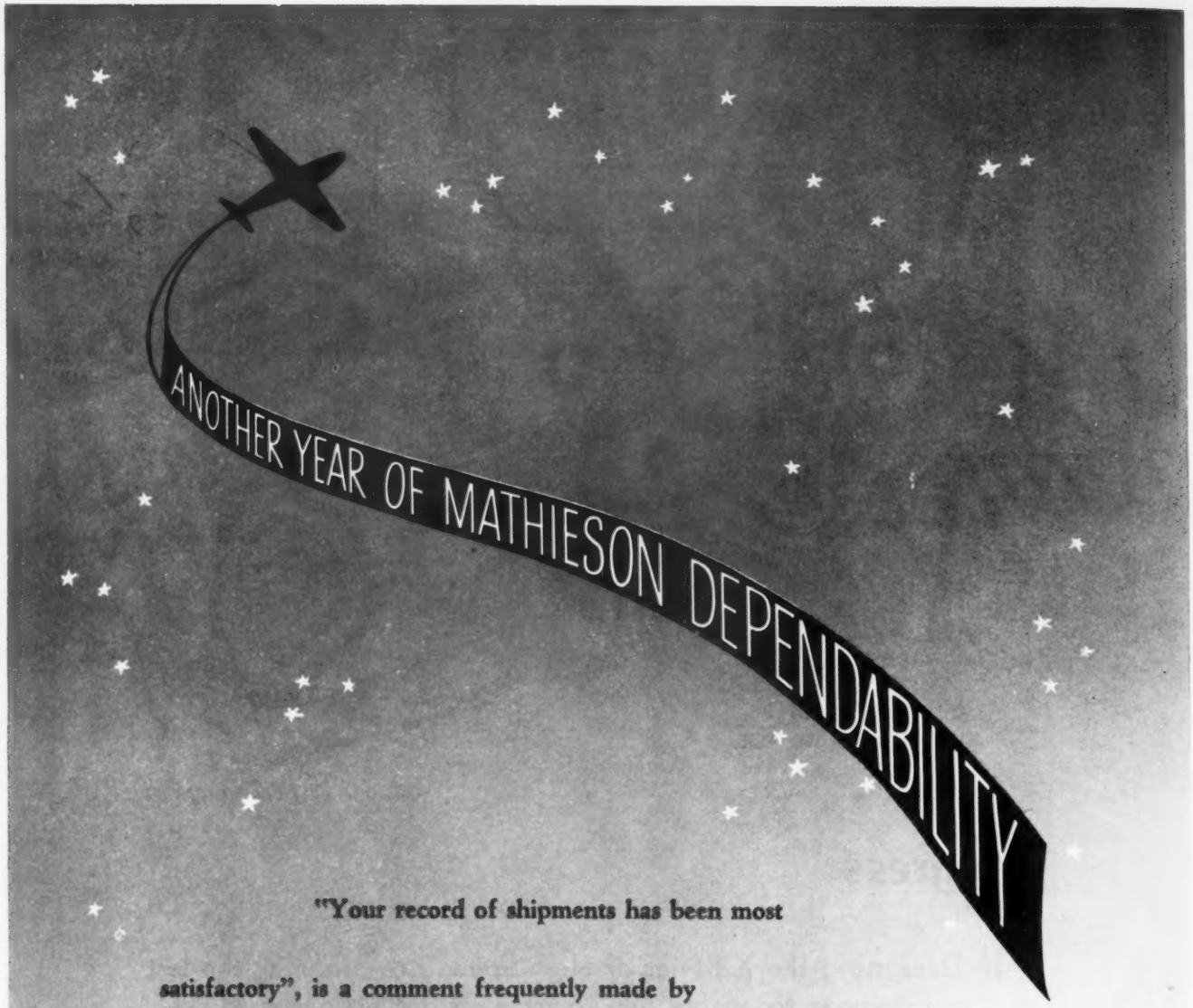
In Designing the X Series of High Speed Looms during the last two decades to enable you to increase production up to 35%. X-2 XL XP cotton looms and XD rayon looms weave goods heretofore considered impossible both as to range and to quality.

In Developing scores of new attachments for existing looms. The Midget Feeler, Stafford Thread Cutter, and Sliding Bar Warp Stop Motion, to mention a few, have cut your costs while increasing your production.

In Standardizing shop procedure so that improved manufacturing methods in the foundry and in the machine shop insure uniform parts. Draper Repairs Fit.

In Expanding facilities for research and development to meet the challenge of higher speed, improved design, and newly developed materials. We aim to bring you thoroughly proven performance so that you may produce more cloth at less cost.

RETAINING LEADERSHIP **DRAPER CORPORATION** THROUGH RESEARCH



"Your record of shipments has been most satisfactory", is a comment frequently made by Mathieson customers. Every effort is being made to maintain this dependable service. For 1948, we are carefully matching contract commitments against our productive capacity to make every possible pound of material available to our customers.

The Mathieson Alkali Works (Inc.)

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Mathieson
CHEMICALS

Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda . . . Liquid Chlorine . . . Chlorine Dioxide . . . Ammonia, Anhydrous & Aqua . . . HTH Products . . . Fused Alkali Products . . . Dry Ice . . . Carbonic Gas . . . Sodium Chlorite Products . . . Sodium Methylate.

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THE *Long-Range* VIEW

TELL YOUR EMPLOYEES

Perhaps you in your company do something very special for your employees; or maybe, as is true with most companies, you do a great many little things. In either case, the likelihood is that your employees are taking for granted whatever you are doing.

The management of one mill paused to take stock of the many little things it was doing and found that the total cost to the company was equivalent to $5.00 a week for each employee. This particular plant was unionized and was faced with new "fringe" demands. The mill management pointed out what it was already doing and asked that any further "fringe" demands be considered as "cents per hour" of additional compensation. It was felt that in such a light reasonable employees would realize the impact of their demands.

Too often, such things as vacation with pay, insurance in many forms, recreational facilities, meals below cost, free medical services, profit sharing, bonuses, and the like are considered either as an established right or as costing but little. New employees are particularly unlikely to be conscious of benefits from the company, or they are prone to accept them as a matter of course —unless someone points out the true significance of the benefits. However, it is with new employees that you have your best opportunity to tell all about what your company is doing. In telling them, you can publicize repeatedly points you do not want your older employees to forget.

Such information is often given in the form of a booklet, a letter, posters, a personal talk, or a combination of these. There are many devices that can be used to get a story across, but some are much more effective than others. A booklet can get its story across interestingly or it can shout "paternalism" and defeat itself. A letter should be signed and should be more than just a cold, printed sheet; posters—in our opinion —fall down more often than any other form of promotion; personal talks are best if done by a responsible executive who both takes sufficient time and makes a good impression.

These methods are also, of course, suitable for conveying information to older employees. Other effective methods include a letter mailed to an employee's home, a note with his pay check, and even advertisements in local papers. These, too, can accomplish much with all employees.

While it is true that much of a community's opinion of a plant is formed from what employees say about it, a community-wide program can build up good will. For such purposes, advertisements in local papers and stories about plant activities are beneficial in more ways than one.

Installation of air conditioning, better lighting, improved rest rooms, new floors, additional drinking fountains, and many other things can be publicized advantageously in many ways. A news item in local papers is good for the larger facilities. Plant papers, when they exist, can also be used. Too often, however, plant papers are permitted to fall into the rut of reporting just personal items, usually because the papers lack stimulation, due to a top management which takes the attitude that, "Well, the paper's always there if we need it." Perhaps it is needed now, more than is realized. There are a few things that employees have a right to know, but there are many more that it might be good business to reveal.

If you don't constantly use some regular form of communication with employees but address them spasmodically, you may call entirely too much attention to what you have to say, or you may find employees unprepared to believe the message.

Nothing quite takes the place of direct, personal contact. It has been our observation that many of the textile mills that have the best personnel relations have someone in top management who is close to the rank-and-file employees. He is easily approachable and is ready to give out information spontaneously or in response to questions. Any device that is used to substitute for direct, personal contact should be recognized as a substitute and made as personal as possible.

When talking with a person, you have little difficulty in recognizing his point of view. Allowance for that point of view should be made, so far as possible, in the more indirect methods of communicating with them.

Don't assume that employees already know all about the benefits of working for your company or much about what you are trying to accomplish. While we realize there are limits as to how far you can go in revealing information about your company, it is our observation that most managements err on the side of conservatism in this matter.

Giving your employees the fullest information you can will show that you and they are working to a common end and that there is no sharp line dividing management and labor.

C. H. Bendigo

Clean up with TEXAIR

MOST ECONOMICAL HOSE EVER BUILT FOR MILL USE!

HERE'S an outstanding new hose designed to last many times longer than any yet developed for mill clean-up work. It's Texair Hose — Goodyear Research's lastest contribution to greater cotton mill efficiency.

Texair is a light, supple, non-kinking air hose of unusual strength and stamina. It is built throughout of oil-resistant synthetic rubber — won't soften or weaken through contact with oil on machines or in the air line.

Its cover is tough and robust, and built smooth so you can easily pull it across floors and around corners. Reinforcement is a braided ply of strong cabled yarn that provides extra strength to withstand snaking and "tow-rope" strains. Made in 3/8- and 1/2-inch diameter sizes, it will handle pressures up to 125 pounds.

By every test, Texair is the finest and most economical mill hose ever built. Order it today from the G.T.M. — Goodyear Technical Man — or your Goodyear distributor. For further details, write: Goodyear, Akron 16, Ohio or Los Angeles 54, California.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM -Specified TEXAIR HOSE

for cotton mill clean-up service

A Smooth, tough, abrasion- and oil-resistant cover

B Reinforcing braided ply of cabled cotton yarn

C Non-porous, oil-resistant synthetic rubber

FOR BELTING, HOSE, MOLDED GOODS AND PACKING built to the world's highest quality standard, phone your nearest Goodyear Industrial Rubber Products Distributor.

GOODYEAR

THE GREATEST NAME IN RUBBER

Texair—T.M. The Goodyear T. & R. Co.

SCENE NEAR ST. JOVITE, QUEBEC, CANADA

THERE is always need for unselfish service.
A NEW YEAR . . . A new road on which
to prove our gratitude for many blessings.

HOWARD BROS. MFG. CO.
WORCESTER 8, MASS.

Harry C. Bixley
President

"Which Squirrel-Cage Motor Shall I Buy?"

Open-Type? This general-purpose squirrel-cage motor meets about 9 out of every 10 application requirements; so chances are it's the design you'll select. Allis-Chalmers builds generously proportioned, rugged *open-type* squirrel-cage motors in sizes from 1 hp to the largest practical requirement.

Splash-Proof? Where operating conditions are conducive to entrance of particles or liquids into ordinary motors from either top or sides, Allis-Chalmers *splash-proof* squirrel-cage motors may be your best buy. They're designed to *exclude* top or side directed particles and liquids. Sizes 1 hp to the largest.

Vertical? or Flange-Type? *Either* can solve a space problem. *Vertical* motors (sizes 1 hp to largest) for vertical drives. *Flange-mounted* for side or angle drives. In both types bearings and closures are designed to prevent grease escapement. Mounting flange for attaching to your base can be provided.

Totally-Enclosed? Explosion-Proof? Completely weather-proof and fan-cooled, these motors are built to beat abrasive dust, dirt and corrosive fumes, or moisture conditions that cause windings in ordinary motors to deteriorate. *Explosion-proof type* for oil refineries, paint, varnish or lacquer plants, etc.; Underwriters approved; reduce hazards in explosive or dust atmospheres. Either type built from 1 hp and up.

Are Motor Decisions More Important Today?

YOU BET THEY ARE! One *obvious* reason is the need for keeping costs down. Another is that in the rush to fill demand much equipment is being misapplied; making it harder to maintain profits not alone today, but tomorrow, the next day and the next year—as long as misapplication continues!

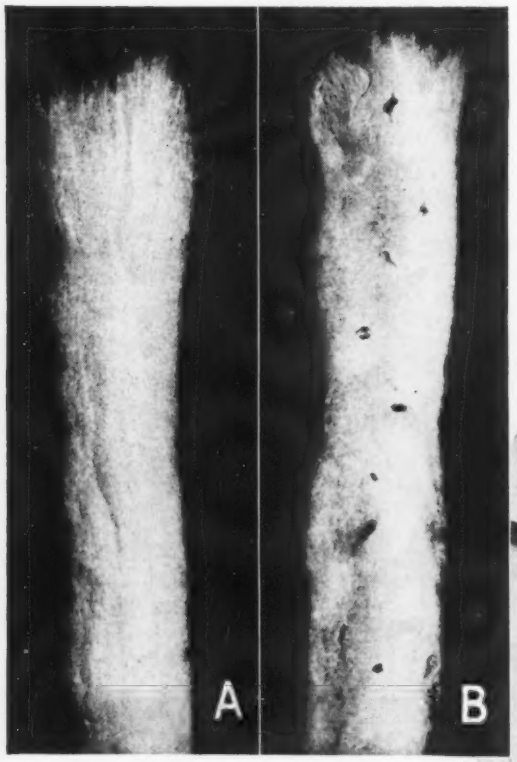
That's why it's important to take a good look at motors — their characteristics — your equipment — power source and surroundings — *before* you buy and apply! If you're in doubt, don't take chances — call a motor expert! ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2327

A CENTURY OF SERVICE to Industry THAT MADE America Great

ALLIS-CHALMERS

One of the Big 3 in Electric Power Equipment-
Biggest of All in Range of Industrial Products

The Continuous Stripper - an economical "tool" for BETTER PRODUCTION and CLEANER CLOTH



A comparison of card slivers . . . A—a clean cylinder produces a sliver with a minimum of neps, broken leaf, and other impurities.

B—a dirty cylinder, loaded with impacted waste, cannot do an efficient cleaning job.

The Saco Lowell Continuous Stripper is daily demonstrating its ability to increase production at the card and at the same time reduce waste and improve the cleanliness and evenness of the sliver.

The freedom from impacted waste, which interferes with the carding action of the wire of the cylinder clothing, generally reduces the nep count; and the lack of periodical stripping improves the uniformity of the sliver.

The improvement in card operation shown by the 'test data' at the right, is by no means an unusual case as evidenced by the fact that —

there are more than 12,000 Saco-Lowell Continuous Strippers now in operation —

increasing production, improving quality and preventing waste for mills who have put them on their cards.

Write for bulletin to our nearest office.

Here are the improvements in one mill after installing Saco-Lowell Continuous Strippers:

Reduction in Cylinder and Doffer Strips
96%

Reduction in Neps in Sliver
38%

Reduction in Impurities in Sliver
24%

Increase in Breaking Strength of Yarn
5.4%

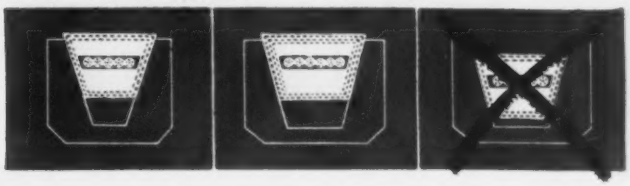
Saco-Lowell Shops • **BOSTON**

SHOPS AT BIDDEFORD, MAINE · BRANCHES: CHARLOTTE • GREENVILLE • ATLANTA

Now You Can Get Worthington QD Sheaves at Substantial Price Reductions

Worthington's increased production of QD Sheaves — to meet industry's growing demands—has resulted in lower production costs, which we pass along to you — our customer, as a substantial price reduction in stock "A" and "B" sheave sizes. Service has been improved, too! From conveniently located stocks you can choose over 25,000 QD Sheave combinations for V-Belt drives ranging from fractional to 200 hp.

Strength Where It's Needed Most. Upper sketch shows I-Beam construction in Worthington QD Driven Sheaves. Compare it with conventional design below and note how material is concentrated where strain is greatest — putting strength where strength is needed most. Taper-mated, load-tested hubs and rims, full-sized pull-up bolts and I-Beam arm construction are Worthington features which make the QD Sheave the "Strongest Sheave for its weight ever made" — a plus value to sheave users.

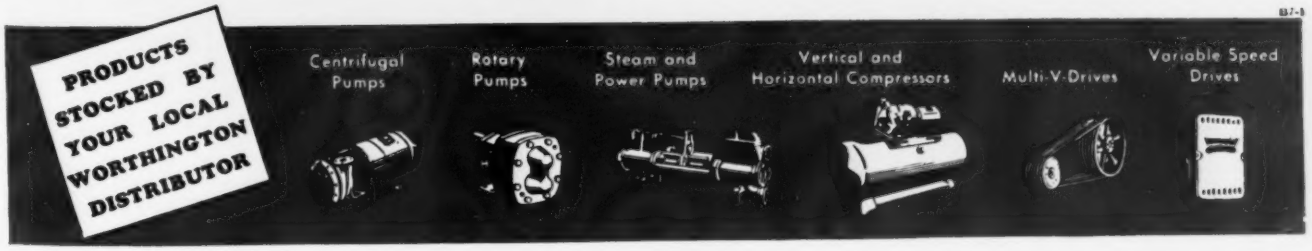


Customer Preference Based on Market Research. Customer preference dictated a basic change in the original QD Sheave from a combination groove to a separate "A" and a separate "B" groove — which is what you, our customer, wanted — to give you a better appearing sheave and a better fit between belt and groove. Worthington QD Sheaves are custom-built to fit the belt — an "A" belt in an "A" groove — a "B" belt in a "B" groove. Available in listed stock sizes from 3" to 22" diameters in "A" section; from 4" to 38" in "B" section.

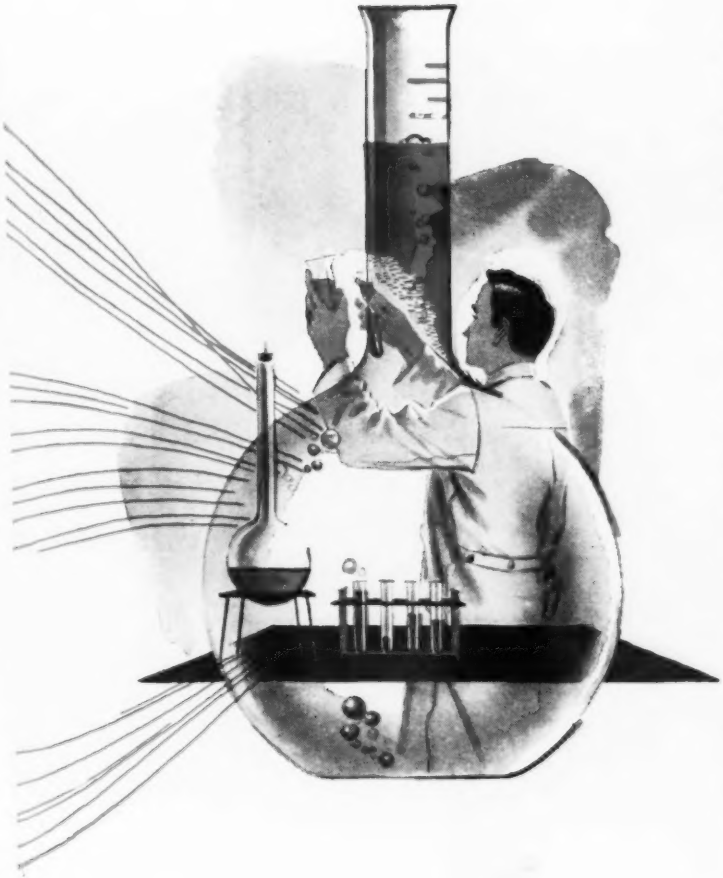
Get the Proof. A demonstration in your own shop will convince you that only Worthington — the original QD Sheave — is Easy to Get On — Easy to Get Off — Yet Always Tight on the Shaft — proof that *there's more worth in Worthington.*

Contact your nearest distributor for a demonstration today. Worthington Pump and Machinery Corporation, Merchandising Div., Harrison, N. J. 36 District Offices throughout U. S.

WORTHINGTON



and back of it all... Research



BACK of every inch of textile fiber that leaves a Du Pont plant is a beehive of research.

There is specific research in fibers—and it comes as a great surprise to a lot of people to know that as many as 800 Du Pont men and women are engaged in direct research on textile fibers.

But even that is just the beginning.

For thousands upon thousands of other men and women of Du Pont are working every day in chemical and engineering research. Here a man at work in organic chemistry may make a discovery that tomorrow will serve directly to improve the quality of a Du Pont textile fiber. There a man working in plastics may come across something that will be the fiber news of the future.

Not only in Du Pont plants but in many a famous university there are scientists at work today laying the foundations for tomorrow's better things for better living.

When you are faced with a basic problem in the use of a textile fiber, when you are making a decision on what fiber to select—there are practical advantages to you in the extent and the quality of Du Pont research.

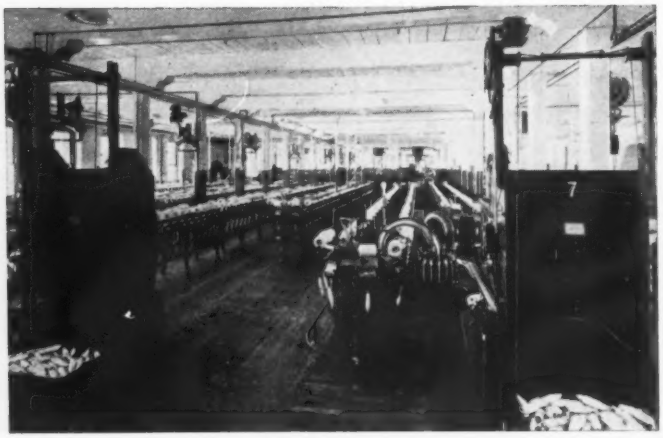
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION
RAYON DEPARTMENT
E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Delaware

For NYLON
For RAYON
For FIBERS to come...look to Du Pont

BETTER THINGS FOR BETTER LIVING...*THROUGH CHEMISTRY*

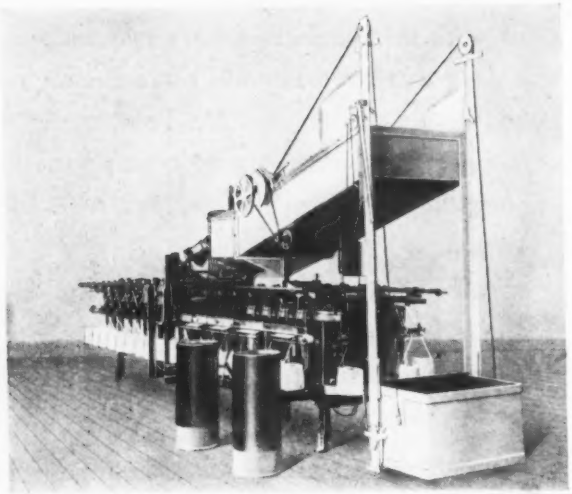
DU PONT
REG. U.S. PAT. OFF.

LEADERS IN THE AUTOMATIC WINDING FIELD



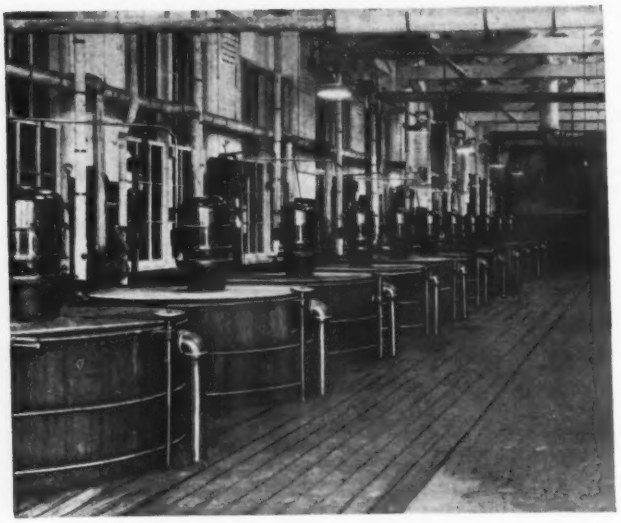
The only Automatic Winder that will wind the standard 6″ traverse on cheeses, warping cones, knitting cones, etc.

Production 900 to 1000 bobbins per hour with one operator



The only fully automatic loom bobbin winder. The empty supply quills and the full wound quills are handled automatically without attention by the operator.

Production 2000 or more quills per hour per operator; cotton, spun fiber, worsted, linen, paper, and filament yarns.



Dyeing and drying equipment for worsted and cut fiber top and for yarns.

ABBOTT MACHINE COMPANY

WILTON, N. H.

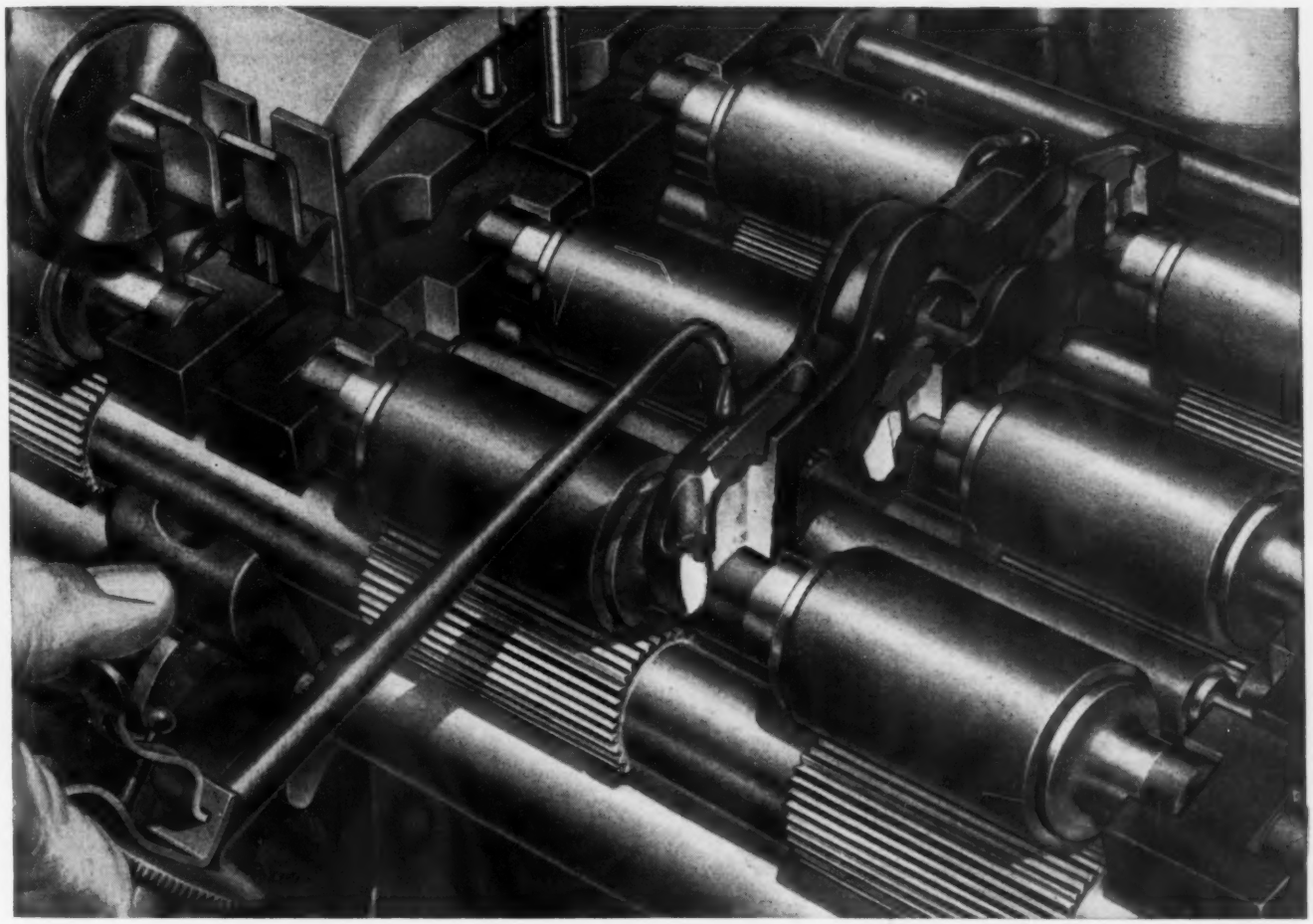
Southern Office ***Greenville, S. C.***

Oil is in the "Saddle" here!

Inside Knowledge on Lubrication Problems

—WEAR—

This is One of a Series of Messages on Common Problems in Your Mill



HERE'S A SPOT in your spinning department where lubricating oil is "in the saddle," where it can mean the difference between smooth, continuous operation or frequent breakdowns and loss of production.

It's between that top roll saddle and those revolving roll necks. Here extremely-high pressures tend to squeeze the oil out and "starve" the bearing surfaces. Excessive wear is the result.

For peak protection with minimum oil feeds, many mills are using Gargoyle Vactra Oils for this top roll job. Operators report these famous oils form strong, persistent films that adhere to the metal during the long intervals between applications. "Creeping out" that stains the rolls and yarns is reduced to a minimum.

★ ★ ★

See your Socony-Vacuum lubrication specialist and get Gargoyle Vactra Oils "in the saddle" in your mills.

GARGOYLE Lubricants

SOCONY-VACUUM

SOCONY-VACUUM OIL CO., INC.
and Affiliates: Magnolia Petroleum Co.
General Petroleum Corporation

Socony-Vacuum Correct Lubrication

FOR EVERY MACHINE... EVERY OPERATING CONDITION

KOHORN

(Number 9 of a series)

This Plant Constructed in 1937

1919

1924

Expert Guidance

1935

FILAMENT RAYON
RAYON STAPLE FIBER
CELLOPHANE
PLANTS

Pioneers of the Rayon Industry

OSCAR KOHORN & CO., Ltd.

EXECUTIVE OFFICES

501 Fifth Avenue New York 17, N. Y.

1938

SERVICES RENDERED:

PLANT LOCATION

(a) Survey on the ground to determine location, man-power, transportation, markets, raw material, power, fuel and water supplies.
(b) Determine size of initial plant, and plan its expansion.
(c) Consultation on types of yarn, denier, packaging, etc.
(d) Estimates for land and building, equipment, and working capital.
(e) Estimate production cost and overhead, sales and profit.

ERECTION OF BUILDINGS AND MACHINERY

(a) Furnish complete plans for buildings and machinery.
(b) Supply all produciton machinery and auxiliary equipment.
(c) Send KOHORN engineers to erect plant, install machinery and building equipment.

STARTING PRODUCTION

(a) KOHORN Chemists and Engineers, start the plant and bring it into full production.
(b) KOHORN experts help train local labor.
(c) Modern chemical and mechanical processes, installed by KOHORN, hold consumption of raw material and labor to a minimum.
(d) KOHORN engineers co-operate with your sales department in introducing product to the market.

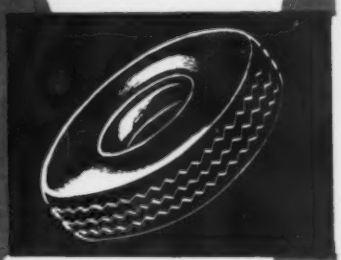
1941

PLANT EXPANSION

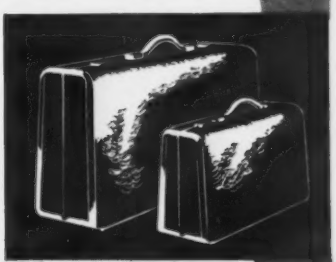
(a) KOHORN'S interest in your plant, after it is turned over to you, continues. Consultation always available.
(b) Our latest patents are put at your disposal when plant expansion is contemplated.

Fountain of USE!

● Flintkote Solvents are widely used for fabric sizing, and in the Rug and Carpet industry to improve wear and appearance of the finished product.



● In tire manufacture, Flintkote Tire Cord Solutioning for rayon and cotton tire cord insures a firm, durable bond of rubber to carcass...so important to tire life.



● New adhesives are replacing stitching, riveting and other old methods of fastening in many industries. Many shoemakers save time and money by cementing with Flintkote Industrial Adhesives.

● Flintkote Binder Compounds are helping many fabricators speed up their production. Among the uses of such compounds are curled hair (above) and glass fibers.

● Out of Flintkote research flows new *utility* for elastomers. With it, come advantages in performance and *use* to manufacturers and processors.

Flintkote has applied research to many compounding problems. And, as a result, offers a wide line of rubbers, resins, latex compounds and asphalts, both as aqueous dispersions and solvent cements.

These materials...designed for standard or special requirements...are supplied either by drum or tank-car.

If some saturating, laminating or bonding requirement is giving you trouble, let us help. Our technical staff will be glad to work right along with you to formulate just what you need. Write us today.

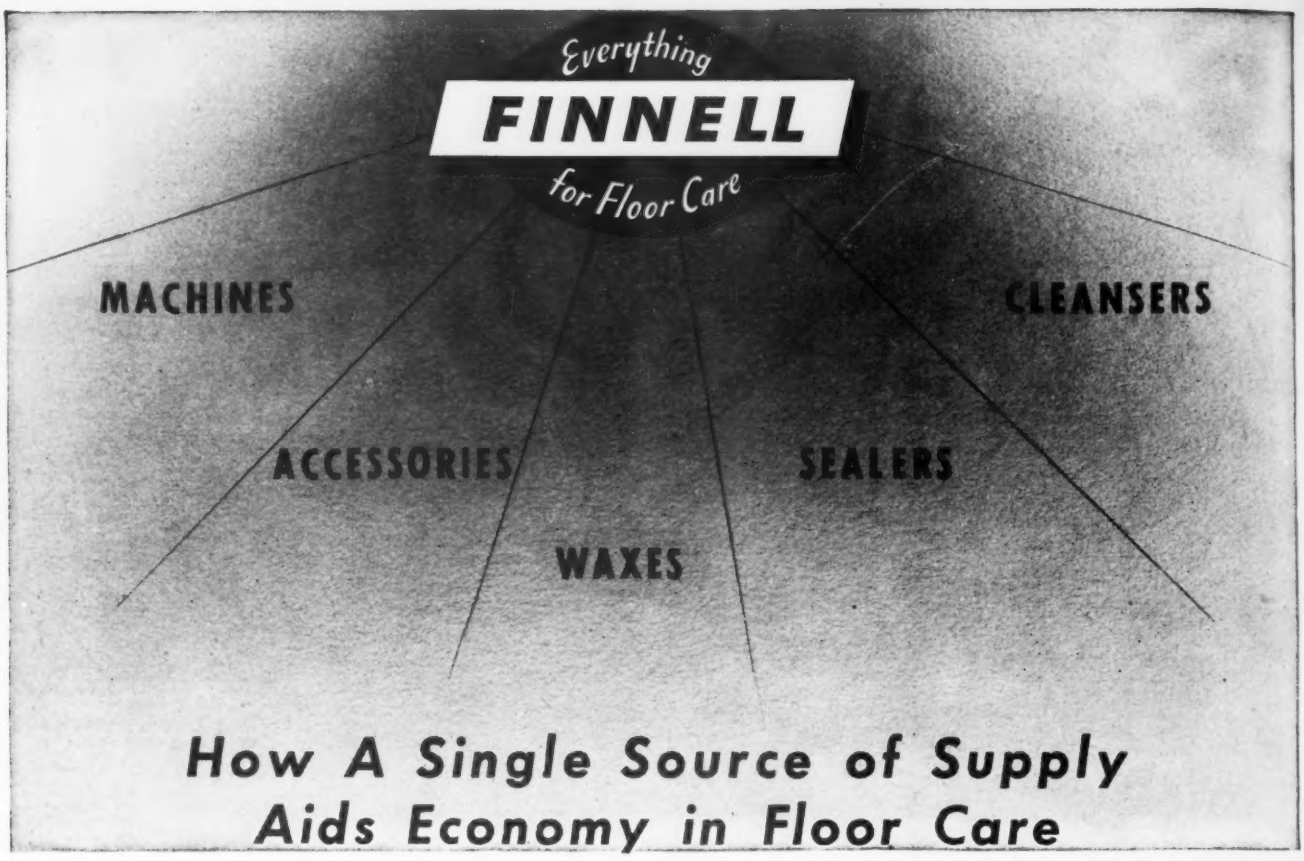
FLINTKOTE

Products for Industry

FLINTKOTE INDUSTRIAL PRODUCTS

THE FLINTKOTE COMPANY, *Industrial Products Division*

30 Rockefeller Plaza, New York 20, N. Y. • Atlanta • Boston • Chicago Heights
Detroit • Los Angeles • New Orleans • Washington • Toronto • Montreal



How A Single Source of Supply Aids Economy in Floor Care

It's convenient to buy floor-maintenance equipment and related products from one source, but a single source of supply such as *Finnell* offers many more advantages. Serving all industries, *Finnell* makes equipment for every type of floor care . . . for all floors . . . all areas. From the *Finnell* line you can choose the equipment that provides the maximum coverage for your particular floors—whether maintenance calls for wet scrubbing, dry scrubbing, or dry cleaning . . . or for waxing or polishing.

Finnell also makes a full line of Cleansers specially developed for the greater speed of mechanical-scrubbing. The cleaning action of *Finnell* Cleansers *keeps pace* with the speed of the machine. This cuts operating time, which in turn reduces labor costs and saves on brushes.

In waxing, too, co-ordinated economy can be effected, by doing the job mechanically with a portable *Finnell* and *Finnell-Kote*, the solid wax that's applied hot. This process produces a finish unique in wearing and protective qualities, and hence is more economical on a year-to-year cost basis.

In addition to a full line of *Machines, Cleansers,* and *Waxes, Finnell* makes several types of *Sealers* . . . also *Mop Trucks, Steel-Wool Pads,* and other accessories. The nearby *Finnell Floor Specialist and Engineer* is readily available for free floor survey, demonstration, or consultation . . . and for training your maintenance operators in the proper use of *Finnell* equipment. Phone or write nearest *Finnell* branch or Finnell System, Inc., 1901 East Street, Elkhart, Indiana. Canadian Office: Ottawa, Ontario.

* * * *

The *Finnell* illustrated at left is a *Self-Propelled Combination Scrubber-Vacuum* for use on large-area floors. A complete cleaning unit *all in one,* it applies the cleanser, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

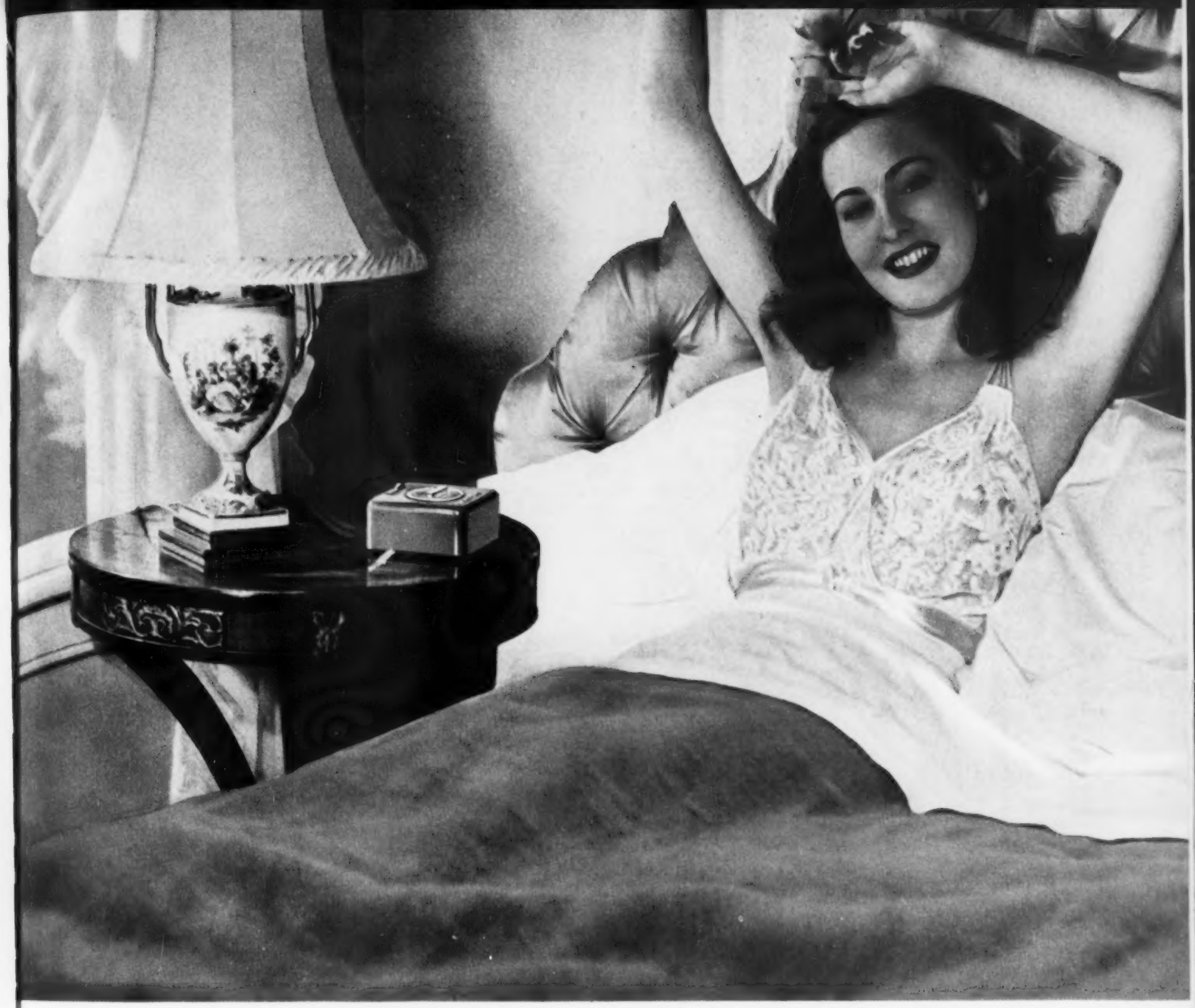
FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

SANDOZ PRESENTS *The color achievement of the month*



Warm Turquoise BY FIELDCREST MILLS

The temperature is always under control under Fieldcrest's Thermostatic Blanket.

And *colors* are always under control when Fieldcrest Mills uses Sandoz dyes in these 75% virgin wool, 25% long fibre cotton blankets.

In many of the mills where the news in textiles is being made, Sandoz colors are counted on for the fastness in processing, fastness in service, that a quality product demands.

Sandoz products which are particularly well suited to the requirements of blankets—in both manufacture and service—include the following specialties which can be depended upon to give you fastness to light, fastness to washing, accurate control of shade, and ease of application . . .

Brilliant Alizarine Light Violet FFR Pat.
Brilliant Alizarine Milling Blue BL Pat.
Alizarine Light Brown BL Pat.
Xylene Milling Yellow 3GL.

For acid, chrome or direct dyes, or auxiliary chemicals, for both natural and synthetic fibres, be guided by these successful "color achievements".

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. • Other branches at Providence, Paterson, Chicago.

DETROIT PUBLIC LIBRARY

SANDOZ *thinks ahead with textiles*

SANDOZ

THIS IS NO. 67 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

VARIOUS SLUB CATCHER COMBINATIONS (Roto-Coner*)

Inspection of yarn involves many complex problems, and recommendations regarding slub catcher settings are complicated by the fact that individual mills' requirements vary all the way from removing only the largest imperfection down to removing even the smallest.

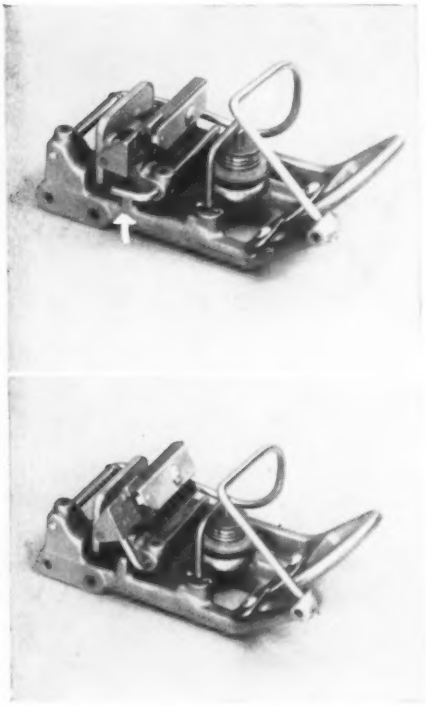


Fig. 1 Top — Needle-type slub catcher in position for inspecting the yarn. Note right-angled bail ahead of needles. Bottom — Bail finger is turned up raising the needles out of way of the yarn.

On the Roto-Coner*, the tension bracket is designed to accommodate any of the following: single blade slub catcher, two blades, or a combination of blade and needle-type.

In connection with the combination arrangement, some mills believe that a more complete inspection job is done by having the blade ahead of the needles; others prefer the needles first. Universal engineers recommend the latter, but the bracket is designed so that the two types are interchangeable. It takes only a minute to make the change.

Many mills use the needle-type slub catcher on some yarns and not on others. Provision is made in the bracket to lift the needles, when not in use, a safe distance above the yarn. Instead of requiring a wrench and a spacer for this, the bracket has a bail just ahead of the needles. It is only necessary to turn the finger on the bail upward to lift the slub catcher out of the way.

BOBBIN SLIPPAGE (No. 99 Winding Machine)

When short bunches are being made and when one bobbin fills up before its mate, it is an indication that slippage may be occurring. This may be caused by the clutch, the bobbin driver or by the bobbin itself.

A test for slippage is made by attempting to stop the bobbin by hand. If this is easily done, there is probably slippage during winding.

The inside of the spindle sleeve should be examined to make sure the washer is in place and that it is not badly worn. A worn sleeve should be replaced. When the clutch is worn, corkscrew bobbins are wound, and the clutch must be adjusted or replaced.

Most likely it is a worn bobbin that causes the slippage. Filling bobbins get rough usage at the loom, at the stripper and in handling. In time the butt and nose become worn to such an extent that the bobbin is not properly driven, resulting in short bunches and short bobbins.

Sometimes a worn bobbin will be driven off center because of the poor condition of the butt, in which case the yarn may be chafed. Such worn bobbins should be replaced.

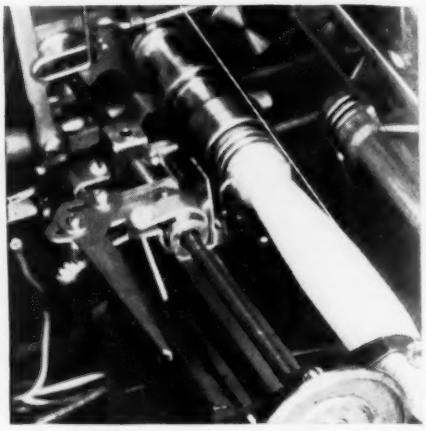


Fig. 2 Bobbin butt in driver, No. 99 Winding Machine.

HOW TO USE PARTS CATALOGS

Parts catalogs for Universal Winding Machines list many more parts than are ever used on any one machine. Because of the great amount of information necessary to serve a variety of requirements, it is possible that a customer will have difficulty in finding specific information quickly.

Such parts as cams of different throws and gears of different numbers of teeth are frequently given in tables. Also, considerable space is devoted to attachments that are used on some machines and not on others.

Some mills have found it particularly helpful to cross out or otherwise obliterate those sections of the catalog dealing with parts that will never be needed and to mark in some manner the sections having to do with parts in common usage.

When doubt exists as to what part is needed, a sample should be sent us; but when the correct part number has been established, either from the packing list or the invoice, a note should be made in the parts catalog in order to facilitate future orders of the same part.

See our Catalog in TEXTILE WORLD YEARBOOK

*(R) January, 1948

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

23-7-4

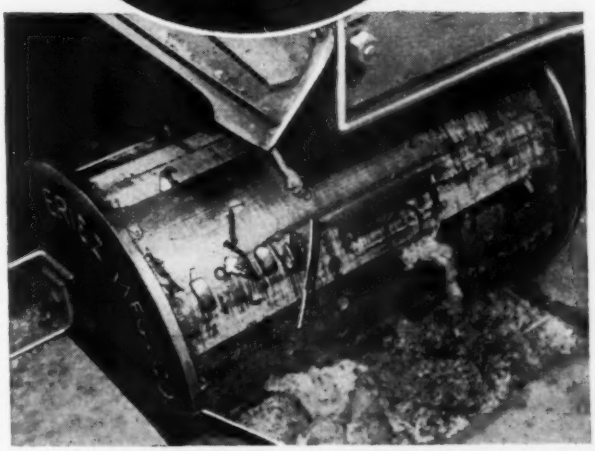
UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

Stop TRAMP IRON Damage

Spiked Apron Magnet

Magnetic Hump



Magnetic Pulley

with Eriez NON-ELECTRIC *Permanent* MAGNETS

THESE three installations are typical in showing how hundreds of Eriez users in the textile industry have eliminated tramp iron from their processing lines . . . how they have thus bought positive insurance against fires and damage to processing machinery. Your choice of Eriez Non-Electric Permanent Magnetic Protection is profitable too! First cost is last cost . . . no rectifiers, transformers, or other electrical gadgets needed. Operating and maintenance costs are cut to zero! Whatever your separation needs, there's an Eriez to fit the job. Eriez Non-Electric Permanent Magnetic Protection is engineered to fit your requirements efficiently and economically . . . Let us send our nearest Eriez Engineer to consult with you.

CLIP AND MAIL TODAY

Please send bulletin No. 104 A and the following: TW-1

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name .....

Address ..... City ..... State .....

For Complete Textile Magnetic Protection . . . See Eriez First

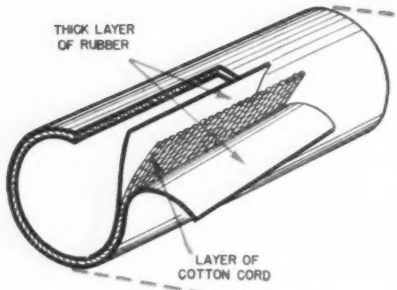
See our Exhibit Booths 75-76 International Textile Expo.

Eriez EAR' EEZ

ERIEZ MANUFACTURING CO.

501 EAST 12th ST. ERIE, PENNA.

Accotex Aprons won't



Reinforced construction gives you stronger, more uniform yarn

You get constant fiber control for stronger, more even yarn when you use Armstrong's Accotex Long Draft Aprons. Accotex Aprons fit correctly. In service, they can't stretch, grow, or sag because they are reinforced by a strong cord interliner developed exclusively by Armstrong. So effective is this reinforcing that, even after years in the mill, an Accotex Apron still will fit snugly on the form on which it was made . . . proof of its stability.

Accotex Aprons have extra-long life, too. Heavy layers of rubber enclose the cord interliner to provide a tough wearing surface on both the inside and outside of the apron. The synthetic rubber used is non-oxidizing and not affected by oil.

Besides assuring constant fiber control throughout their long service life, Accotex Aprons offer these additional advantages:

SEAMLESS CONSTRUCTION—Accotex Aprons have no seams—no structural weaknesses to cause premature failure.

UNIFORMITY—All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.

CLEAN RUNNING—Accotex Aprons do not crack or scuff. Thus they help produce cleaner-running work and less waste.

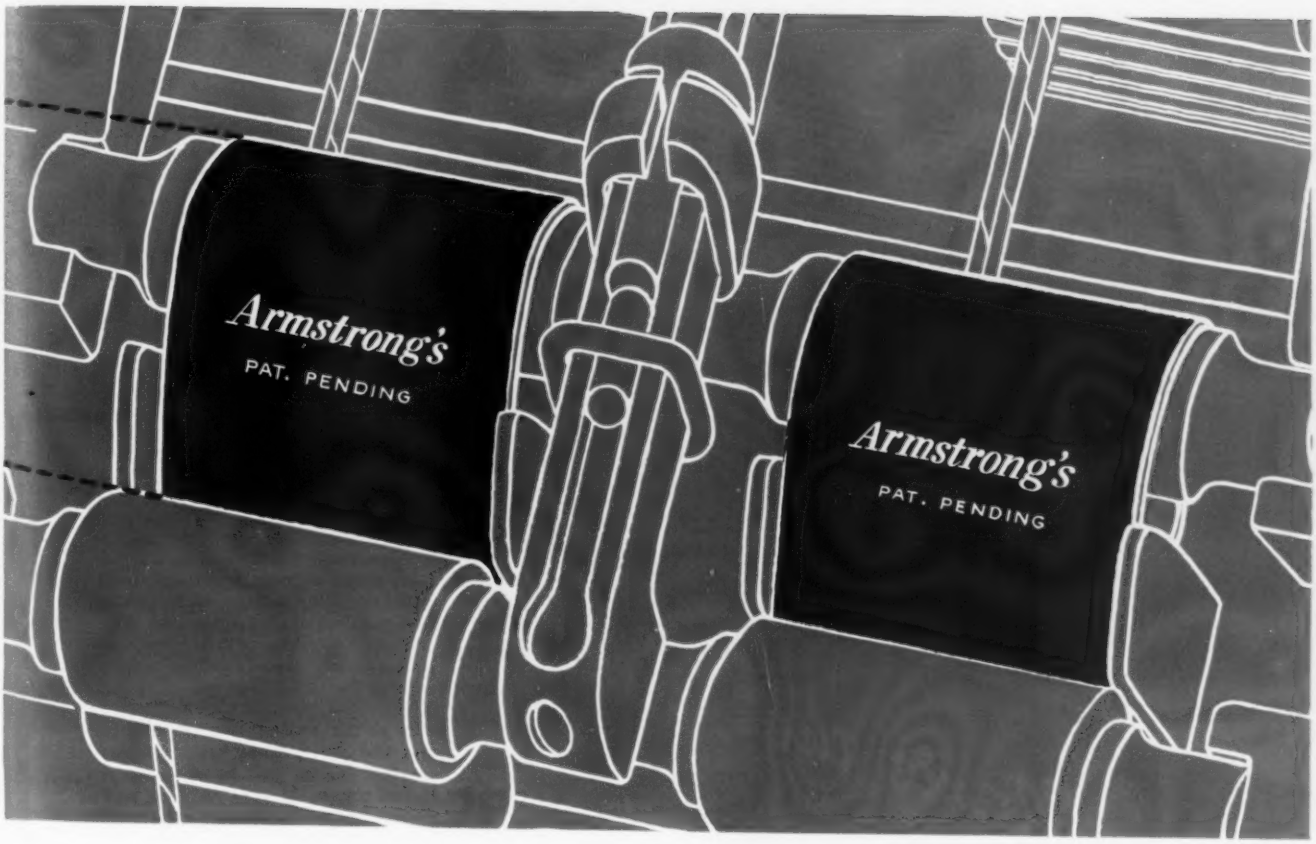
REDUCED LAPPING—Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.

GOOD FRICTION—The efficient "grip" of Accotex Aprons reduces slippage.

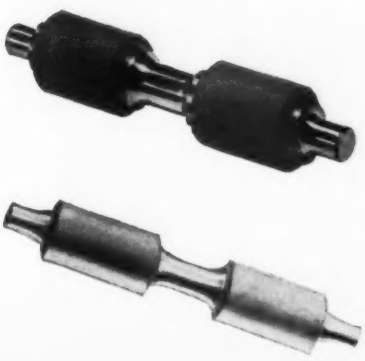
Ask your Armstrong representative for samples, prices, and additional information on Armstrong's Accotex Aprons. Or write today for descriptive literature to Armstrong Cork Company, Textile Products Department, 8301 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS

stretch or "grow"



ACCOTEX COTS . . . by the makers of Accotex Aprons



Armstrong's NC727 Accotex Cot is now being used by more mills than any other roll covering. It gives you the advantages of both synthetic rubber and cork. This combination of toughness and high friction provides the maximum amount of eyebrow resistance possible today in a synthetic cot. It also results in better drafting for high yarn strength with less slicking up. In addition, Accotex Cots offer a long initial service life. They can be rebuffed as many as five or six times.

Armstrong's J490 Accotex Cot is outstandingly superior in resistance to top roll laps. You can prove this right on your own frames. It is the cot to use where lapping is a serious consideration when running either wool or synthetic fibers on cotton system equipment. The specially developed synthetic rubber compound in the J490 Accotex Cot is not affected by temperature and humidity changes.

ACCOTEX COTS
CORK COTS

COTTON WOOL SYNTHETIC OR BLEND

You Name the Fiber

THE MEDLEY SEALED-IN BALL BEARING TOP ROLL is the talk of the industry among mill men who have seen it in operation. Its sealed-in, permanent lubrication feature insures a grease-free sliver—while its sealed-in ball-bearings make for a smoother, more uniform sliver.

Medley Drawing is flexible in that a changeover from cotton to wool—or wool to blend can be made by making simple adjustments easily done on the Medley Frame. And, in case you didn't know, your present drawing frames can be changed to Medley Drawing right in your mill with a minimum loss of operating time. Write for details.

Medley can draw it and deliver a better sliver

Medley can prove this claim: Whatever the fiber or blend of fibers you are processing, the Medley Drawing Frame definitely can help you increase production efficiency, lower operating costs . . . and meet competitive conditions. The Medley Frame's ability to do this may be summed up in a single statement of fact: *Medley Drawing produces a clean, grease-free sliver superior to and with less variation than does ordinary drawing.* It is adjustable to take staple lengths from ⅝ inch to 13 inches . . . in any fiber.

The Medley Drawing Frame is a precision built machine. It features 1) Hobbed helical steel and cast iron gears, 2) Generated bevel gears, 3) studs, journals and necks made of stress-proof steel hardened and ground to close tolerances, 4) Rolls from fine-grained, wear-resisting steel machined to near zero variation—and many other improvements which make present, conventional drawing frames outmoded.

If you have drawing problems; if "ends down" or any other ills resulting from poor drawing is reducing efficiency in your mill — call or write Medley for the help of a trained, textile or mechanical engineer.

Medley has it—or Medley will make it!

The MEDLEY System, Inc.

400 32nd ST., COLUMBUS, GEORGIA

Medley Manufacturing Co., Columbus, Ga. • Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C. • Allan Textile Machine Co., Pawtucket, R. I.

You know ahead of time...

Moon-rise isn't something that's subject to "change without notice." It's certain —a *predictable* fact.

When you're working with variables, and new problems are constantly arising, you look for the *certain* factors—factors that you can depend on.

In our 40 years of experience in producing Diastafor brand de-sizing agents, we've always borne in mind the variables that confront bleachers and dyers. Variables in water—differences in sizing formulas—bring new problems to your mill with almost every batch of goods.

You can't predict these problems ahead of time—but when you select a Diastafor de-sizing agent, we believe the results are *predictable*. You can be sure of a fine finish—*ahead of time*.

Diastafor brand de-sizing agents are available in several types to meet many different needs. They have been especially developed to work easily and well in an unusually wide range of temperatures and pH—and give you a fine flawless finish on cottons, rayons, or mixed goods.

Diastafor de-sizing is always kind to your fabrics—it won't cause impairment of tensile strength. And it's economical—you can buy more enzymes per penny with Diastafor. Write us for prices. Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar

Reg. U.S. Pat. Off.

American Rubber

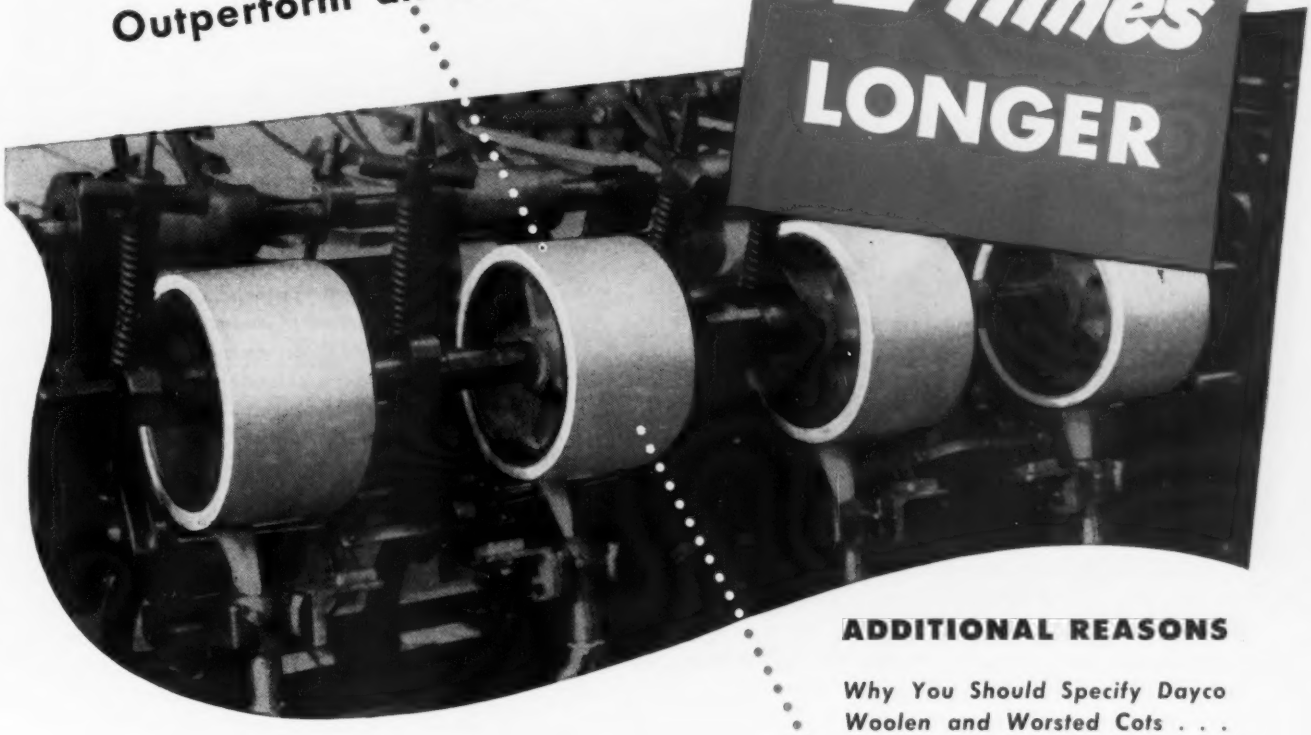
B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

Dayco Woolen and Worsted Cots

Outperform all other types

LAST 12 times LONGER



In mills everywhere, Dayco Cots are *lasting twelve times longer* than other type cots and, at the same time, *producing more uniform yarn.* Daycos provide unequaled, trouble-free performance . . . show no signs of grooving or other deterioration . . . because they are designed and engineered for their specific job. Made of special rubber compounds they are not affected by moisture, temperature extremes and other adverse operating conditions. They retain their original coefficient of friction and resiliency for years of record-breaking service. It will pay you to write for additional information or have one of our textile product engineers call on you. Write today to Dayton Rubber, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Bldg., Greenville, S. C.*

ADDITIONAL REASONS

Why You Should Specify Dayco Woolen and Worsted Cots . . .

They simplify production schedules. More production of wanted numbers.

Any combination of wool, rayon and mohair can be run equally well with a minimum of lint.

Much less matching up required since they produce highest yarn uniformity.

Replacement kept at minimum.

They save up to two thirds of the time required in applying arbors.

Save time and labor formerly spent readjusting pressures after shutdowns

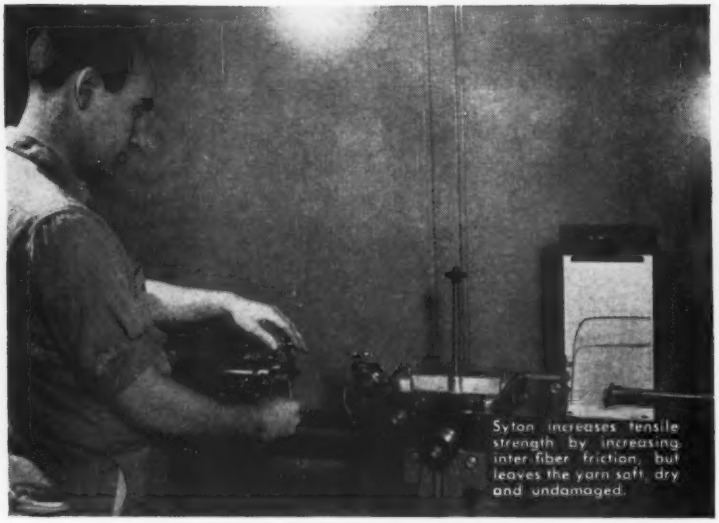
They reduce your power requirements.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Waynesville, N. C. plant, devoted exclusively to manufacturing textile products designed to help you produce finer textiles more economically.

FOR YOUR INFORMATION



Syton increases tensile strength by increasing inter-fiber friction, but leaves the yarn soft, dry and undamaged.

SYTON W20: PROVED DAILY IN LEADING WORSTED SPINNING MILLS:

Syton® W20 is no 9-day laboratory wonder, but a proved textile chemical now accepted as standard by many leading worsted spinners.

Here are the various reasons they give for using Syton:

1. **Reduces twist without loss of strength**
2. **Reduces ends down on the spinning frame**
3. **Produces loftier yarn**
4. **Cuts spinning time and costs**
5. **Produces more uniform yarn**
6. **Reduces aging time after oiling**

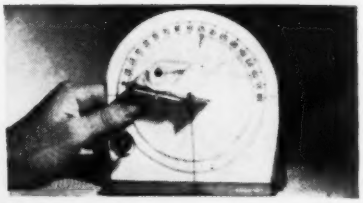
Syton W20 is Monsanto's especially developed dispersion in water of submicroscopic silica. When distributed evenly throughout the stock, Syton increases fiber "drag", and thereby permits better and more uniform draft control of the wool fibers during both drawing and spinning.

When Sytonized yarns are spun under standard conditions, without reducing twist, tensile strength increases are very evident. When Syton-treated yarns are spun at a lower twist than usual, the yarn strength is often 5 to 15% higher. In one mill, for example, when the twist was reduced 20%, the strength of the yarn was still greater than the untreated yarn at standard twist.

Even when Syton treated wool is spun to a finer count, higher breaking strengths have been observed. In one mill, the yarn was regularly spun to a 32's count, Syton-treated yarn was spun from the same stock to a 37's count, yet was 7½% stronger than the untreated.

Syton is simply added to the spinning emulsion at the gill box. No special equipment.

The handy coupon on the opposite page will bring you more information promptly. Just check Item A-1.



Measures Wrinkle-Resistance Accurately

A new, simple, accurate and practical method of measuring wrinkle recovery in fabrics has been developed in the textile research laboratories of Monsanto Chemical Company.

This device, called the Monsanto Wrinkle Recovery Meter, is now available to the trade so that wrinkle-resistance can be demonstrated quickly and accurately.

Previously, wrinkle-resistance was tested either by twisting the fabric and observing the results, or by the inverted V test. In this latter test, samples 4 cm. long were cut and creased, then hung over pins for five minutes. The distance between the outspread ends of the fabric was measured. The weight or softness of the fabric, produced inaccurate results.

The new meter, with similarly prepared samples, eliminates the effect of gravity and compensates for variabilities in construction. It measures accurately the degree of wrinkle-resistance by the actual angle of recovery directly at the crease.

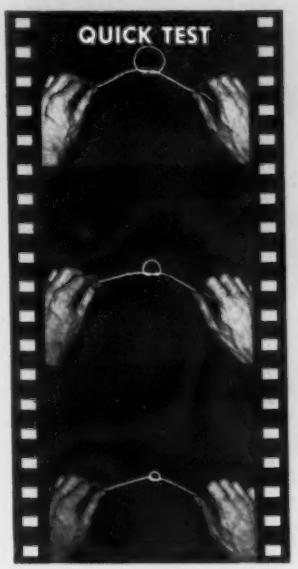
If you want a wrinkle recovery meter (at cost, approximately $15) or information about it, check Item A-3 on the attached coupon.

Synthetic Detergent

Monsanto's Sted* was formulated especially for wool scouring and other cleansing operations in the textile mill requiring a chemically mild, yet extremely powerful, detergent. A non-ionic, non-sudsing product, Sted holds soil in suspension rather than redepositing it on fiber. Check item A-4 for bulletins.

a report on Monsanto's Textile Developments January...1948

STYMER ENDS LONG HUNT FOR EFFICIENT ACETATE SIZE



First, **tie a loop in the yarn as shown in Figure 1.**

Second, **start pulling the outer ends to draw the loop into an ever-decreasing circle.**

Third, **note that on a Stymer-sized yarn, the film is so flexible that it does not crack until the circle reaches a very small diameter. Rigid films break, causing a distortion of the loop, at relatively large diameters.**

Stymer is a new synthetic sizing agent which is being used more and more extensively in acetate slashing.

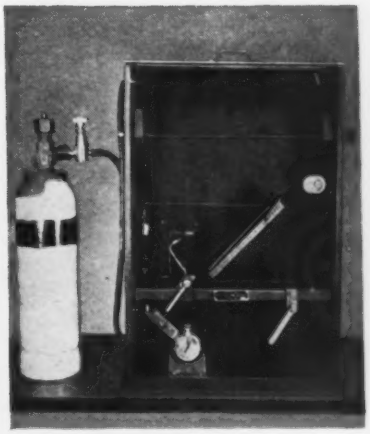
It forms a uniform tough film which gives the warp superior protection over a wide range of humidities and temperatures. The flexibility of the Stymer film can be shown by the simple and familiar "loop test" shown above; its over-all efficiency as a sizing agent has been demonstrated in weaving yarns of many different derniers.

Stymer is applied at normal slashing speeds from a 135-150°F. bath. The solution will not set up in mill pipes, will not gel when cold. Stymer slashed warps release moisture readily and can be dried quickly, without sticking on uncovered cans.

Since the Stymer film is an excellent conductor of electricity, no static eliminators are necessary.

The size can be removed easily from the woven fabric by a mild scour in warm water containing mild alkali and detergent. No enzymes or strong scouring agents are necessary.

For more complete information on Stymer for acetate slashing, check item A-2 on the coupon below.



American Hotel Association Reports on Rezgard

Monsanto's flame retardant textile chemical has received a high recommendation from the American Hotel Association's tests, run by the York Research Corporation, Stamford, Conn. The Association, anxious to get facts on flame retardant materials, found that Rezgard* in competition with other chemicals for this purpose, rated: "Excellent flame and glow-proofing agent. Rated A under tendering bake. One of the very low priced materials."

In the most important safety factor, afterglow, Rezgard showed an average of 0.5 seconds, maximum 1.0 seconds.

For a complete bulletin on Rezgard, check Item A-6 on the coupon.

*Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS—PLASTICS
SERVING INDUSTRY . . . WHICH SERVES MANKIND

USE THIS COUPON TO BRING YOU PROMPTLY FULL INFORMATION ON MONSANTO TEXTILE CHEMICALS

MONSANTO CHEMICAL COMPANY
Textile Chemicals Dept.
140 Federal Street
Boston 10, Mass.

Please send me the following material A-1 A-2 A-3
A-4 A-5 A-6 (Circle item on which information desired)

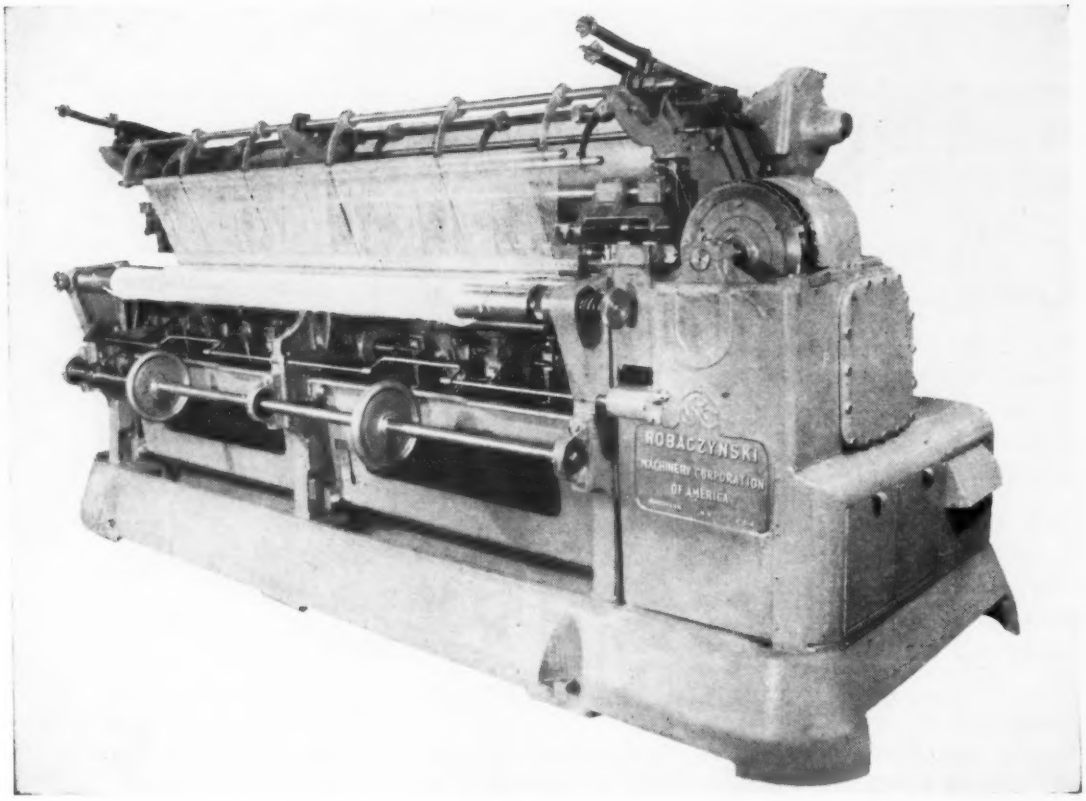
Name.....

Company..... Title.....

Address.....

City..... State.....

ROBACZYNSKI TRICOT
The New Model—Now in Production



Yours For a Happy New Year

A low cost, big producer of outerwear, underwear and other fabrics in widths from 90" to 180" with yarn from 10 denier up, at speeds from 250 to 500 courses per minute.

All parts easily accessible, all adjustments on the front of the machine with the operator working in a natural position.

Quality and quantity production with a long and carefree life is assured See it now in operation at our plant.

Note these features:

- Massive foundations to minimize vibration.
- All adjustments—cam, stitch, truck are made from front of machine with indicators to save time walking around machine.
- Equipped with variable speed drive for any desired speed.
- Let off tensions so designed and sensitive they practically eliminate whipping of threads and the use of slay points.
- Cloth takeup so constructed it needs no attention once it is adjusted.
- Equipped throughout with antifriction bearings.
- All driving mechanism, including motor, totally enclosed.
- All parts easily accessible.

WE ALSO MANUFACTURE

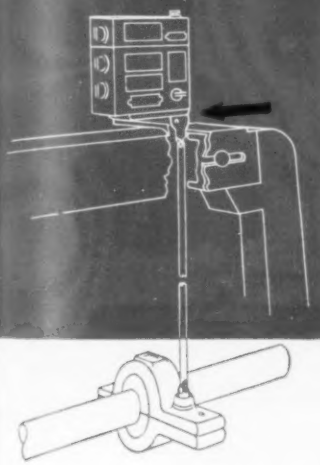
TRICOT MACHINES • V TYPE FLAT KNITTING MACHINES • PURL STITCH OR LINK & LINK MACHINES • BORDER MACHINES
• TUBULAR TRIM KNITTING MACHINES • CIRCULAR STRING & BELT MACHINES • COMPLETE INFORMATION ON REQUEST

ROBACZYNSKI MACHINE CORPORATION

340 TEN EYCK ST., BROOKLYN 6, N. Y.

Veeder-Root Vantage Points

"BQ" BRACKET for 2-3 Pick Counters



eliminates all thrust to counter — and all need for housing support

This rugged, cast-iron counter bracket and heavy brass collar eliminate any thrust to the counter drive-shaft from the worm-and-housing drive connection. And what is more, this BQ Bracket is specially designed to eliminate any need for supporting the worm housing. This is extra protection for counter-accuracy —extra insurance for counter-life.

There are 11 other *Vantage Points* which you get with every Veeder-Root 2-3 Pick Counter you buy. Have your Veeder-Root representative show you these 12 points, and explain exactly how they pay off. It's well worth half an hour of your time. *Write and say when.*

VEEDER-ROOT INC.
HARTFORD 2, CONN.
GREENVILLE, S. C.

OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. *In England:* Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. *In Canada:* Veeder-Root of Canada, Ltd., Montreal.

VEEDER-ROOT 2-3 Pick Counters

Quickly Convertible from 2 to 3-Shift Operation ... Right in Your Mill

Reset and Non-Reset

PROBLEM IN *Flow Control?*

. . . the answer is—

POWELL *Valves*

Through the years of amazing growth and diversification of industry, problems in flow control have become increasingly numerous and more complex.

But in more than a century of specializing in making valves—and valves only—Powell has never failed to solve a problem as it has arisen.

Today there are Powell Valves—in Bronze, Iron, Steel and the widest range of corrosion-resistant metals and alloys ever used in making valves—to satisfy each and every known industrial flow control requirement. And, as a new problem presents itself, the answer will be—Powell Valves.

Fig. 375 — 200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet and renewable, wear-resisting "Powellium" nickel bronze disc.

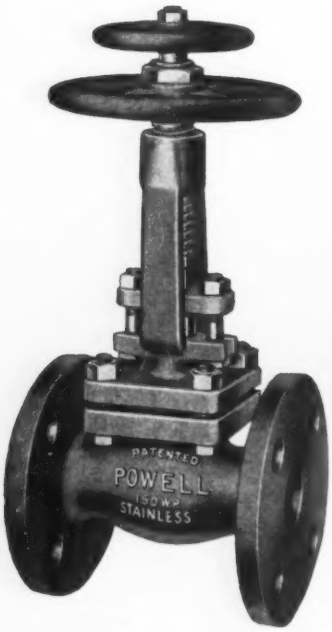


Fig. 1979 S. W.—150-pound Stainless Steel Globe Valve. Flanged ends, bolted flanged yoke-bonnet and outside screw stem. Equipped with Powell Patented Seat Wiper.

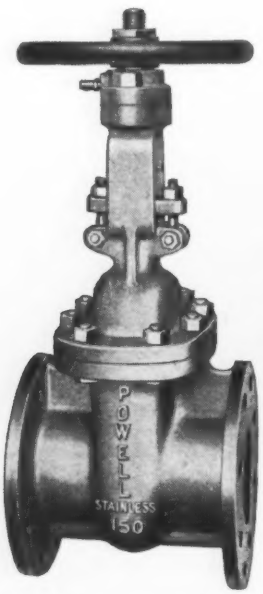


Fig. 2453-G—New, standard 150-pound Stainless Steel Gate Valve with outside screw rising stem, bolted flanged yoke-bonnet and taper wedge solid disc.

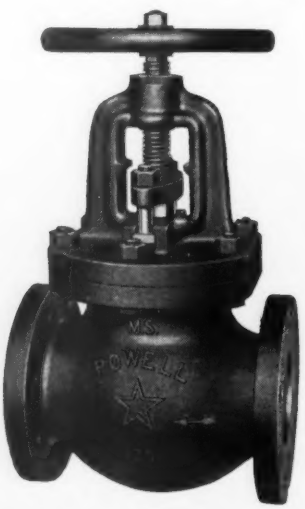


Fig. 301—Large 125-pound Iron Body Bronze Mounted Globe Valve with outside screw rising stem, bolted flanged yoke, renewable bronze seat ring with guide and renewable composition disc.

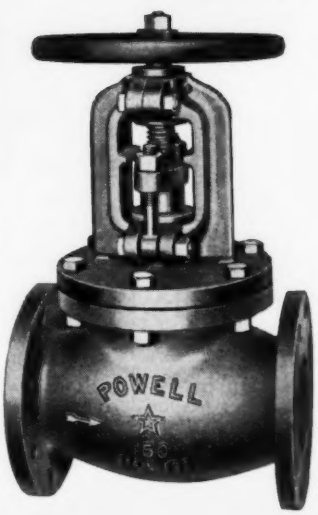


Fig. 2429—150-pound Stainless Steel Globe Valve with flanged ends, outside screw rising stem, bolted flanged yoke and taper wedge solid disc.

The Wm. Powell Co., Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

SPREADER EQUIPPED LOOMS
Pick-up Profits
WITH "MORE PICKS-PER-MINUTE"

THE PATENTED HUNT SPREADER, most revolutionary improvement in modern weave room operation, is giving many users increases up to 36 picks per minute. It also greatly reduces vibration, resulting in smoother, steadier loom operation. Other important advantages are: prolonging the life of looms—increasing cloth output through higher loom speeds—improving the *quality* of fabrics.

Installations of HUNT SPREADERS in more than 200 mills are saving thousands of valuable man-hours by lowering repair and replacement costs, with fewer loom stops.

Learn how you can pick-up profits by installing patented Hunt Spreaders on your looms . . . write, wire or phone today for complete information.

SPEED INCREASE OF 11% ON 1700 LOOMS!

Would you like to read the story—in illustrated folder form—of how one weave room modernized 1768 looms; and how the program resulted in steadier, speedier, more economical operation? Write today! It's yours for the asking.

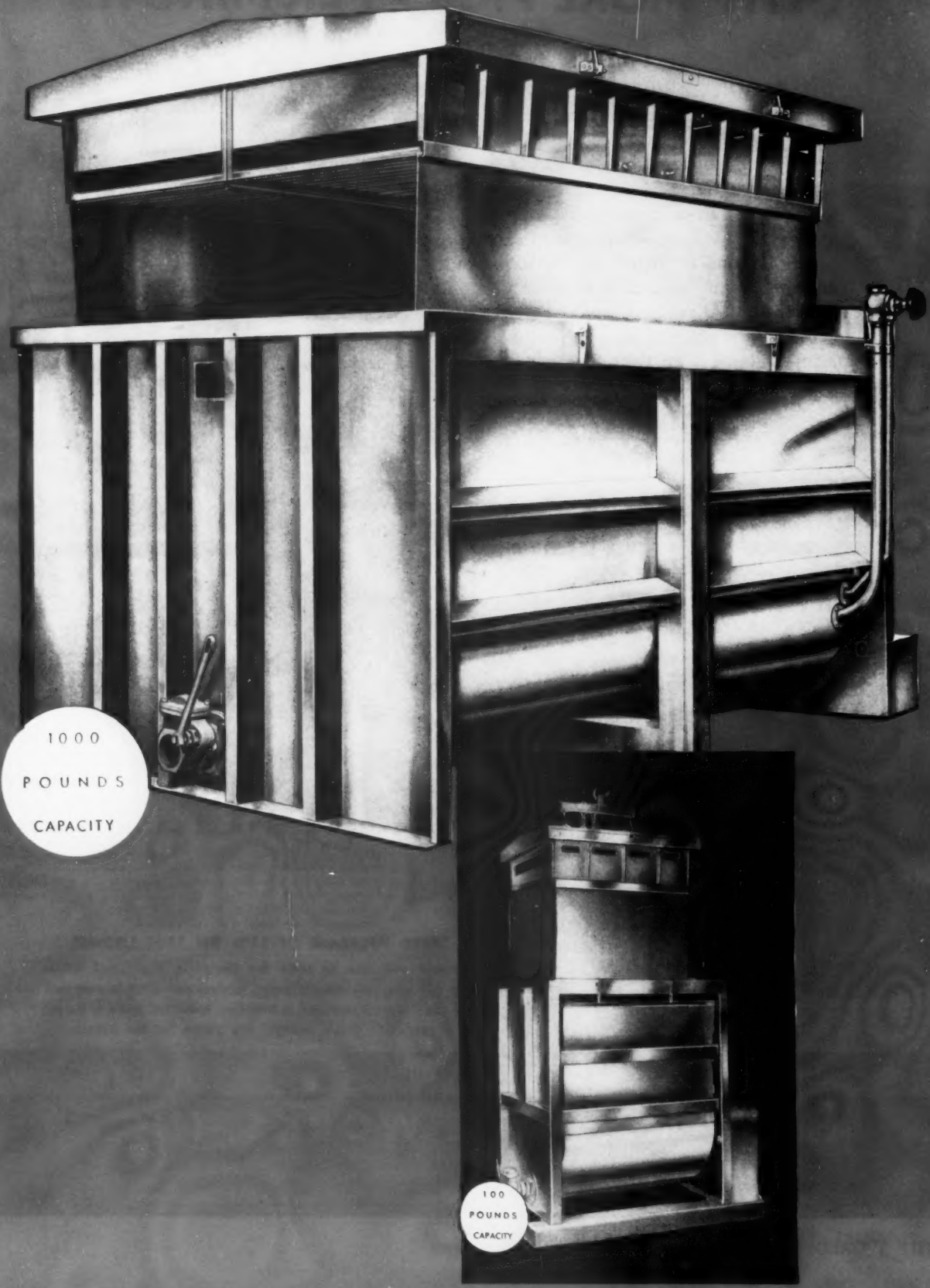
HUNT MACHINE WORKS, INC.

SUCCESSORS TO

MOUNTAIN CITY FOUNDRY AND MACHINE CO. AND HUNT LOOM CO.

200 ACADEMY STREET TELEPHONE 200 GREENVILLE, SOUTH CAROLINA

The New Smith-Drum



PULSATING

SKEIN DYEING MACHINE

This new "pulsating" principle for dyeing heavy woolen and worsted yarns in skein form has been applied for the first time in this country in the new Smith-Drum Pulsating Skein Dyeing Machine. The operation provides for automatic starting and stopping of the pump motor, according to a predetermined cycle. The dye liquor is forced through the skeins intermittently in a downward direction only. The results and savings which it makes possible are little short of revolutionary.

LEVEL SHADE AND UNIFORM QUALITY—No other skein dyeing machine for heavy woolen and worsted yarns can match this new Smith-Drum Machine for levelness of shade or for uniformity of dyeing results.

YARN FREE FROM SNARLS—Because the intermittent flow is in *one direction only* . . . downward . . . the yarn does not become felted or tangled, but remains in perfect condition for winding.

LOW LIQUOR RATIO—This new machine provides for an extremely low liquor to yarn ratio (approximately 10 to 1) . . . and results in appreciable savings in dyestuffs, chemicals, water and steam.

LESS FLOOR SPACE—The capacity of the machine is between 2 and 3 times greater than other types of skein dyeing machines of equal size, for heavy woolen and worsted yarn.

EASY TO CHANGE COLORS—Because there are no false bottom, steam pipes or other obstructions within the stainless steel dye tank, no foreign matter from previous dyes can collect. Consequently, colors may be changed after only a simple rinse.

AUTOMATIC CONTROL—Entire operation is automatically controlled, eliminating the human element and insuring uniform results.

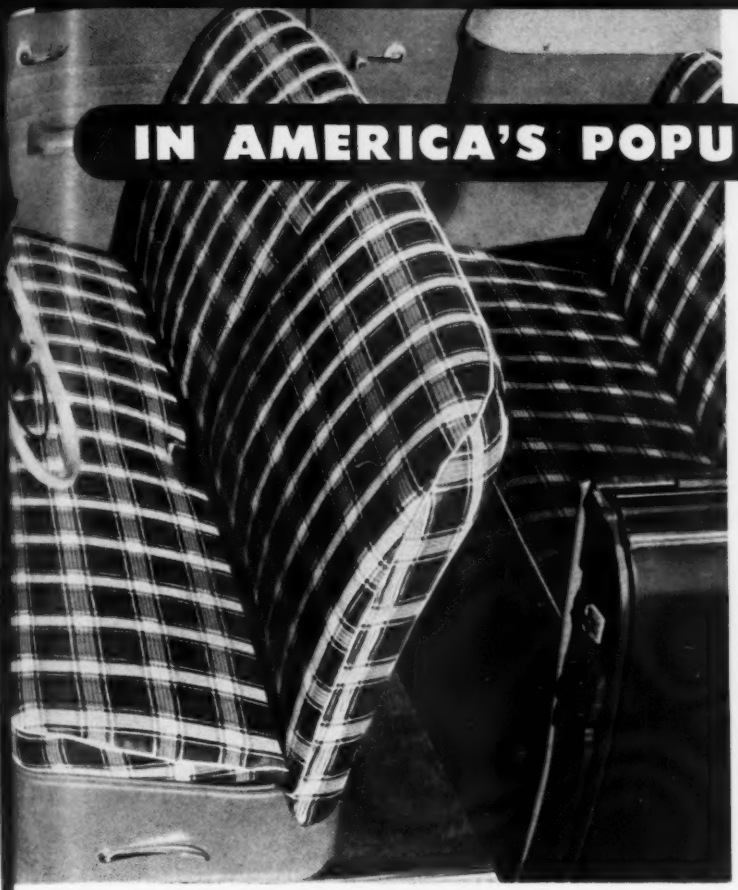
The Smith-Drum Pulsating Skein Dyeing Machine is built in sizes of 100 lbs. to 1,000 lbs. capacity per batch. Write for complete information.

Under License by Samuel Pegg & Son

SMITH, DRUM & COMPANY

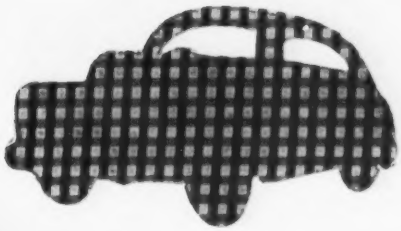
ALLEGHENY AVENUE AT FIFTH STREET • PHILADELPHIA 33, PA.

The International Exposition of Textile Machinery, Equipment and Supplies, to be held in New York May 3, 4, 5, 6 and 7, 1948, will attract the largest number of millmen, overseers, purchasing agents and others interested in all kinds of equipment and supplies, ever assembled under one roof at one time. And rightly so! There's never before been a show of such magnitude, covering all fibres. If you're making a product for these very important people—show it! If you're interested in attending, just say so and you'll get your tickets in due time. Write International Exposition of Textile Machinery, Equipment and Supplies, 36 West 47th Street, New York 19, New York, and you'll learn all there is to know.

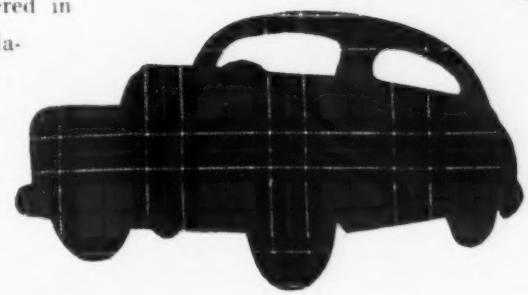


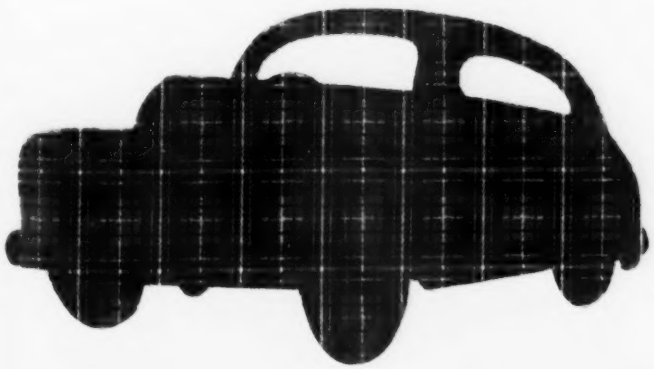
IN AMERICA'S POPULAR AUTOMOBILES . . .

IT'S FABRICS WOVEN OF Saran BY NATIONAL MONOFILAMENTS



There's greater beauty and more driving comfort in the car that's upholstered in fabrics woven of SARAN monofilaments. For these colorful materials keep their good looks indefinitely . . . always remain fresh and trim. You slide smoothly into these seats without tugging or pulling on your clothes.





SARAN woven fabrics are designed specifically for their purpose. No danger of harming them with dirt or grease . . . or Junior's muddy shoes. These fabrics resist chemicals and acids, too, and they stand up against scuffing and the hardest kind of wear.

SARAN monofilaments offer unlimited possibilities for weaving striking patterns and interesting textures into exciting fabrics that are easy to sell. There's an upward turn in textile quality today because the swing is to SARAN!

TRADE MARK REG. U. S. PAT. OFF.

The NATIONAL Plastic Products Company

ODENTON • MARYLAND

NEW YORK: EMPIRE STATE BUILDING • LOS ANGELES: BANKERS BUILDING

L. F. Dommerich & Company

Executive and General Offices

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ESTABLISHED 1840

IF YOU BUY DECATER BLANKETS

You will be glad to know that Van Vlaanderen will soon be able to supply *from stock* decater blankets in 52, 56 and 72 inch widths and in lengths from 400 to 1000 yards. Special widths and lengths will be woven on request.

We have sold hundreds of thousands of yards of this superior blanket perfected from our long experience in building decating machines.

Please Advise

So we will be able to supply the most wanted sizes to the trade, your help will be appreciated. Please write giving number of decating machines, number of blankets used yearly, mentioning width and length. Your courtesy will be appreciated.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, Paterson 3, New Jersey

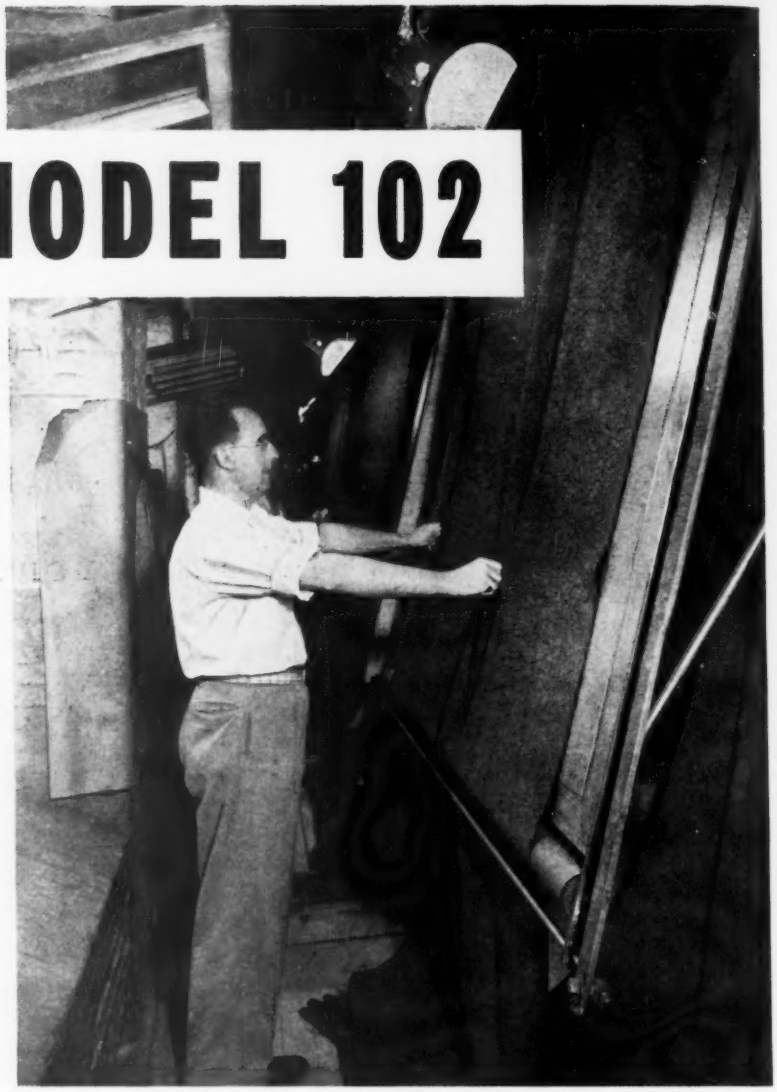
World's largest manufacturer of machinery for processing modern fabrics

FOSTER MODEL 102

. . . for winding Worsted Yarns

•

. . . reduces cost of Burling and Mending



WHEN EQUIPPED with our Type 51A tension and slub catching device, the Foster Model 102 reduces burling and mending time in a woolen or worsted mill because it does such a thorough job of yarn cleaning.

The Type 51A attachment is particularly recommended for high grade yarns that must be free of all imperfections. It provides tension by means of a standard disc washer with felt shock absorber. From this tension the yarn goes into a groove in a hardened steel plate, which prevents a slub from flattening, coming out of the groove under the gate which can be adjusted close enough to break out any slubs or other imperfections, however slight. The gate sits at an angle to the yarn path, so that the nits removed from the yarn do not clog it.

Its ability to produce an exceptionally clean, high quality yarn is only one of many features which recommend the Foster 102. Other equally important features are flexibility, greatly increased production and low maintenance and repair costs. The Model 102 can be equipped to wind a 6″ or 7″ traverse, any taper; angle of wind can be varied from 9° to 18° by changing 4 small gears. Sturdy construction reduces vibration and wear so that repair costs run as low as $3.50 per year per 100 spindle machine. Any competent mechanic can make adjustments. Production is double that obtainable from obsolete machines, with a reduction in operating costs of 1/3.

Tell us your winding problem and let us make recommendations.

Model 102

FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS

Southern Office: **JOHNSTON BUILDING, CHARLOTTE, NORTH CAROLINA**

Canadian Representative: **ROSS, WHITEHEAD & COMPANY, LIMITED**
UNIVERSITY TOWER BUILDING, 660 STE. CATHERINE STREET WEST, MONTREAL, QUEBEC.

"That girl stop this epidemic? Ridiculous!"

But 300 Workers—and their families—were grateful when the Employers Mutuals nurse did just that!

A baffling epidemic of skin infection affected hundreds of workers in a midwestern factory. Production was crippled as the malady raged on, defying all efforts to discover its cause or check its progress.

Finally, an Employers Mutuals nurse was called. Despite whisperings of doubt, she watched the workers with an eye skilled to detect unhygienic practices which might furnish the cause, and found it—contamination of cutting oil. Once discovered, the cause was removed, the plague vanished, comfort of workers was restored, production returned to normal.

* * *

Such health-protecting service to workers and their families in the plants of Employers Mutuals' policyholders has been an outstanding feature for twenty years. Employers Mutuals nurses are confidants and advisers of thousands of individual plant nurses . . . first aid instructors to other thousands of plant workers. Safer plants, better health practices and improved employee relations result.

Unusual service? Employers Mutuals is geared for the unusual. Nurses, engineers, salesmen or claim adjusters . . . all are picked for their inherent capabilities, all are company-trained, all are experienced in handling policyholders' insurance affairs as policyholders think they should be handled.

Employers Mutuals write: Workmen's Compensation—Public Liability—Automobile—Group Health and Accident—Burglary—Plate Glass—Fidelity Bonds—and Other Casualty Insurance. Fire—Extended Coverage—Inland Marine—and allied lines. All policies are nonassessable.

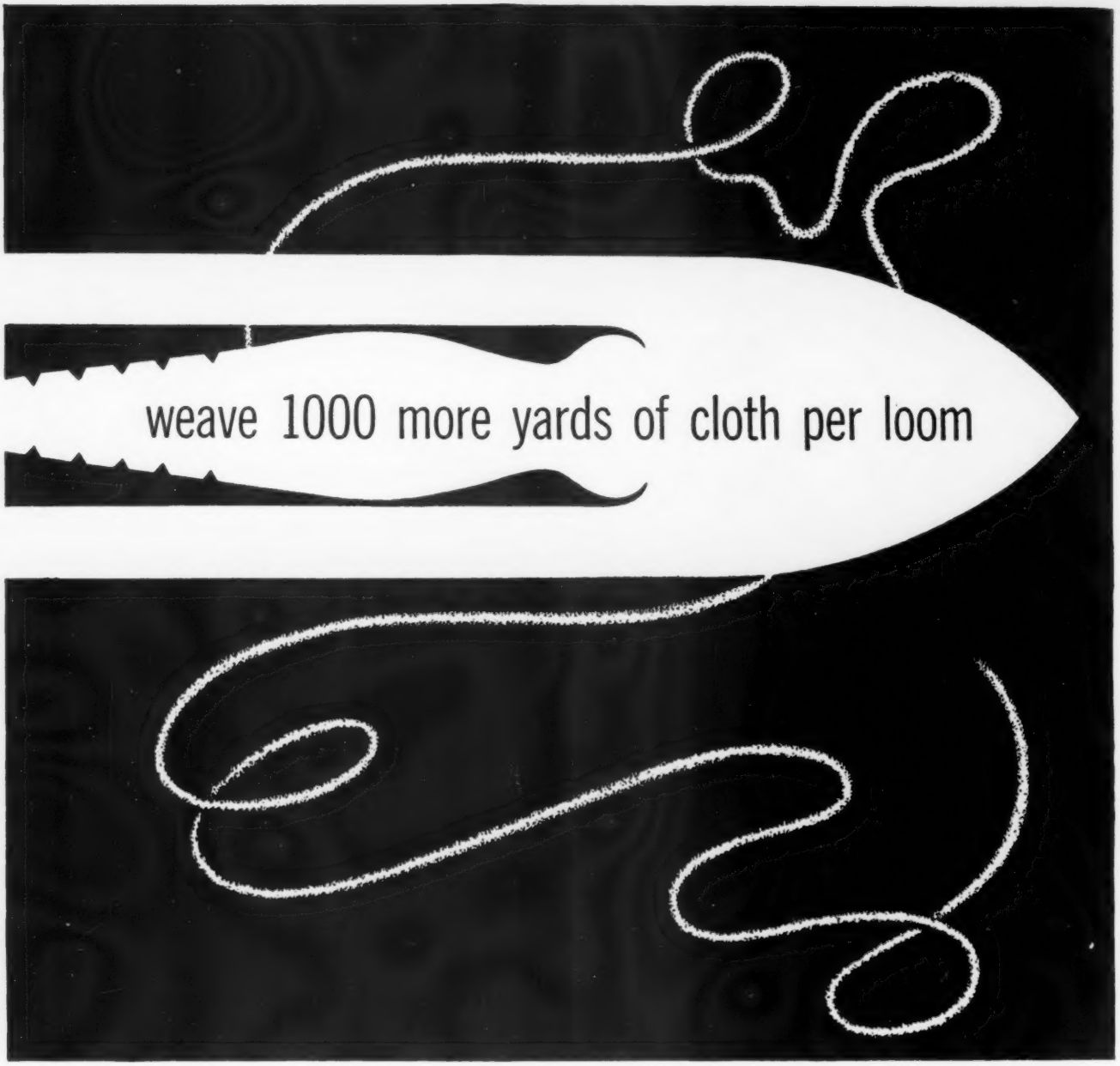
Group insurance for your employees can be handled in the same human, friendly fashion which has characterized all other forms of Employers Mutuals' insurance. Our new booklet, "Your Industrial Relations Program," will give you a better understanding of this important service. Also, Employers Mutuals' "Dictionary of Insurance Terms" is a gold mine of information on the meanings of complex insurance terms for the busy man. Send for both on your letterhead today—or call your local Employers Mutuals man.

Employers Mutuals Policies Protect Lives, Health and Property

EMPLOYERS MUTUALS OF WAUSAU ... make insurance understandable

EMPLOYERS MUTUALS OF WAUSAU

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
HOME OFFICE: WAUSAU, WISCONSIN
Offices in Principal Cities—Consult Your Telephone Directory



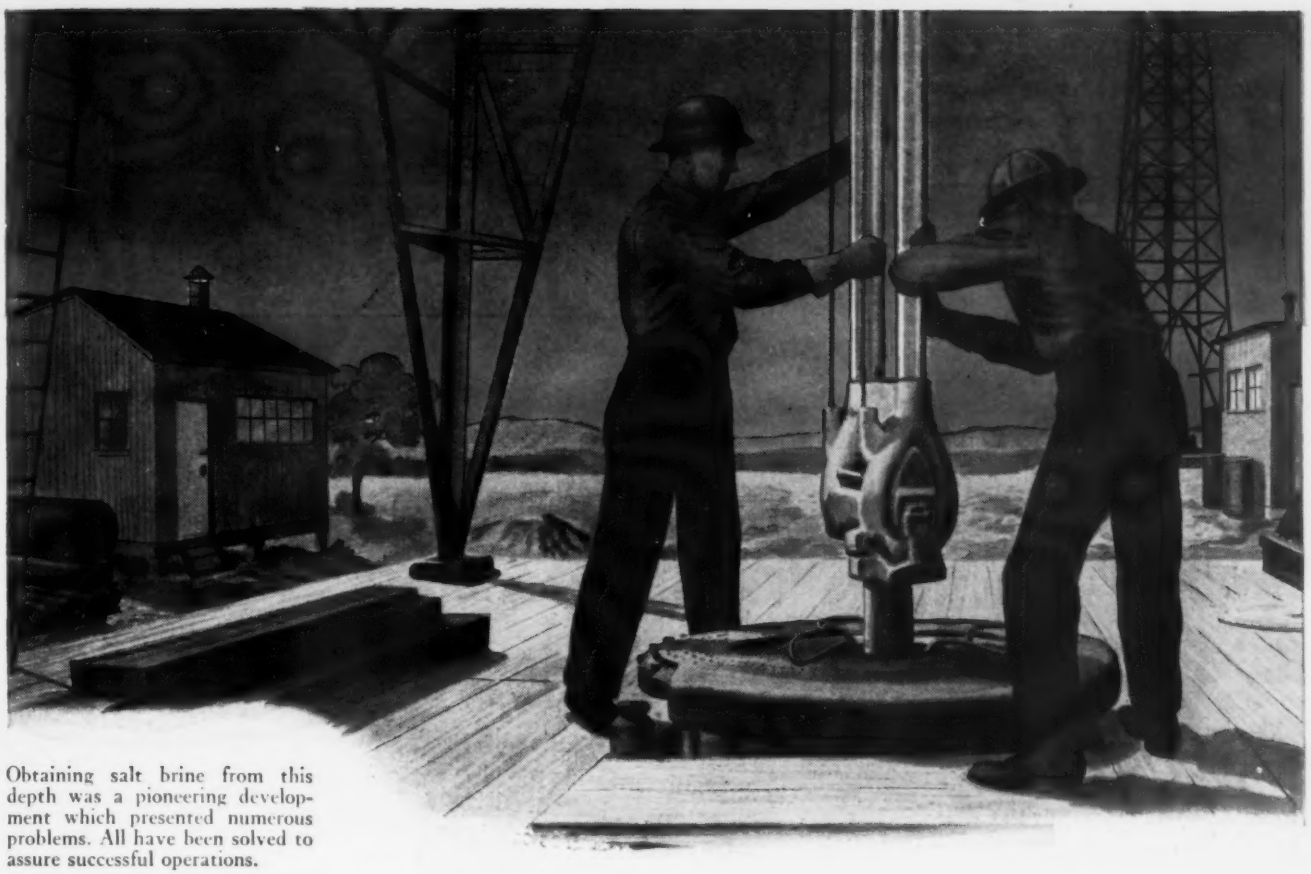
Impossible? Not when your weave room has a new, modern air conditioning system.

One Southern mill was weaving 32,000 yards of cloth per loom per year before it modernized its air conditioning with a Carrier evaporative cooling system. The strict control of humidity and the better control of temperature made possible by this improved Carrier system increased production 3 per cent per loom. Figured against the current selling price of cloth, an increase like this makes the cost of installing and operating a new air conditioning system one of the soundest investments open to a textile mill.

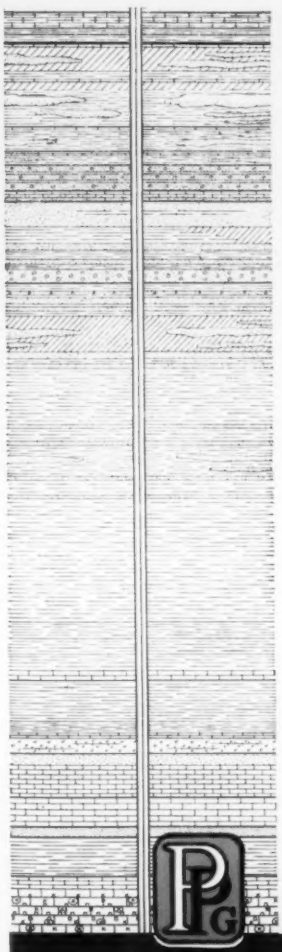
And the benefits of modern air conditioning go far beyond a boost in production. Because all the air is cleaned, the product is cleaner and there are fewer seconds. Workmanship is better all around because a properly air conditioned mill attracts a better type of employee and reduces employee turnover.

As with any type of installation, air conditioning for the textile mill must be engineered with a thorough knowledge of the industry. Carrier engineers pioneered the air conditioning of textile mills and work constantly with leaders in the field. This unrivaled experience is your assurance of efficient, low-cost air conditioning. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING



Obtaining salt brine from this depth was a pioneering development which presented numerous problems. All have been solved to assure successful operations.



Chlorine and Caustic Soda

from the world's deepest salt wells

The deepest salt bed in commercial use—6,800 feet below the earth's surface—provides the brine used at Columbia's electrolytic chlorine-caustic soda plant at Natrium, West Virginia. Hot water, pumped down to this great stratum, dissolves the rock salt and forces the brine to the surface.

The favorable location of the Natrium plant was established as a result of pre-Pearl Harbor studies by Columbia. Built and operated for the DPC, its post-war purchase by Columbia assured continued operation so helpful in meeting the urgent needs of industry for caustic and chlorine. The caustic soda is purified by a patented Columbia process to meet exacting uses such as required in the manufacture of rayon.

Pittsburgh Plate Glass Company, Columbia Chemical Division, Pittsburgh 13, Pa. District Offices: Chicago, Boston, St. Louis, Pittsburgh, New York, Cincinnati, Cleveland, Minneapolis, Philadelphia, Charlotte, San Francisco.

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PITTSBURGH PLATE GLASS COMPANY

FOR LOW POWER

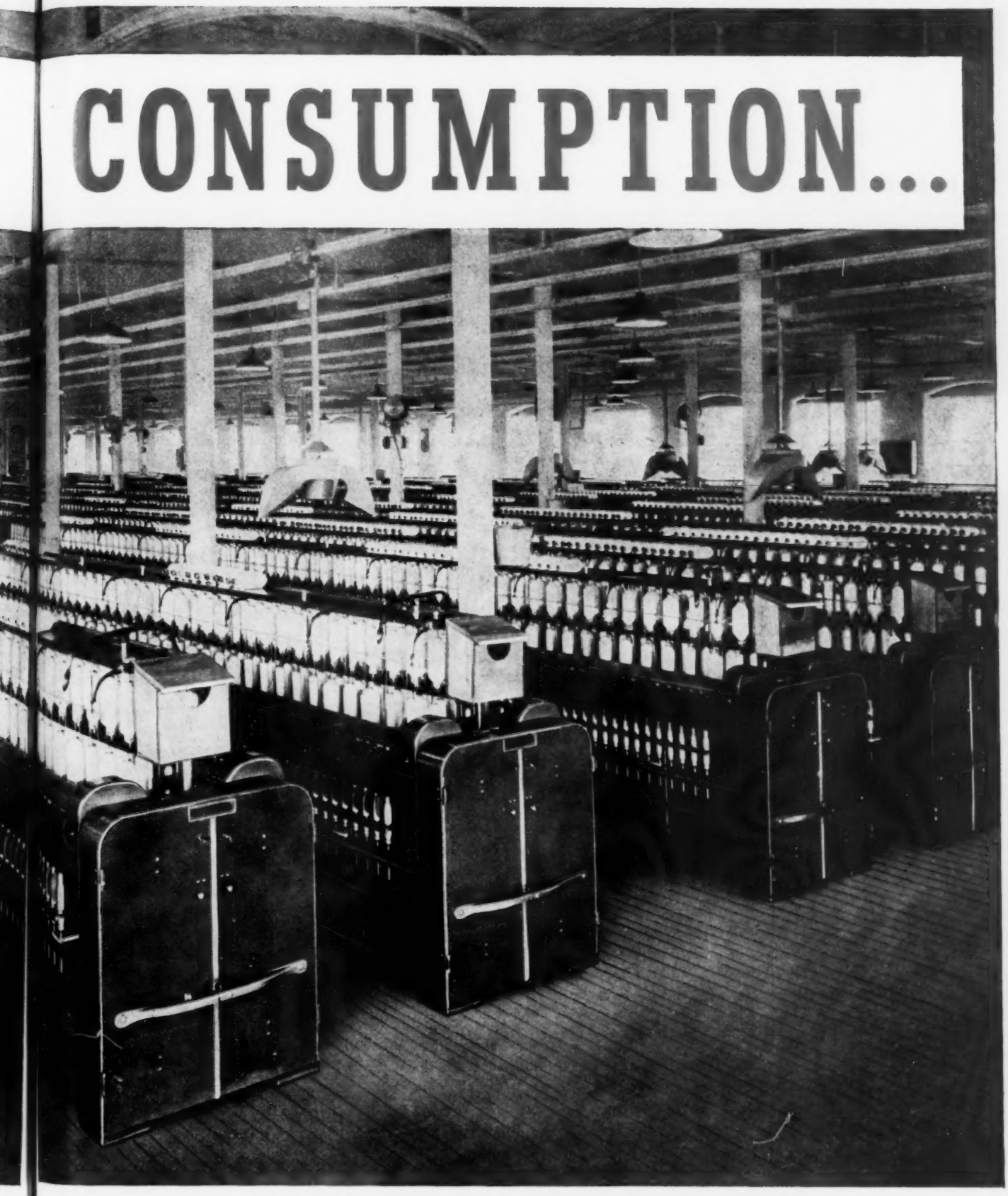
LILY WHITE OILS
ON SPINDLES

Reduction of power costs results from use of the right spindle oils, properly applied. Sinclair LILY WHITE OILS are finely finished lubricants possessing high stability characteristics to resist deterioration . . . increased body and deposits . . . during service. Use of the proper grade assures continuous low power consumption because there is no increased friction drag to cause power loss.

Besides contributing to low power consumption Sinclair LILY WHITE OILS help reduce maintenance cost by promoting long bolster life. Their worth was proven in many plants during the war years when mills were operating at top capacity and replacement parts were difficult to obtain. LILY WHITES come in viscosities to suit all operating speeds. Our lubrication counsel is available in solution of your problems.

SINCLAIR

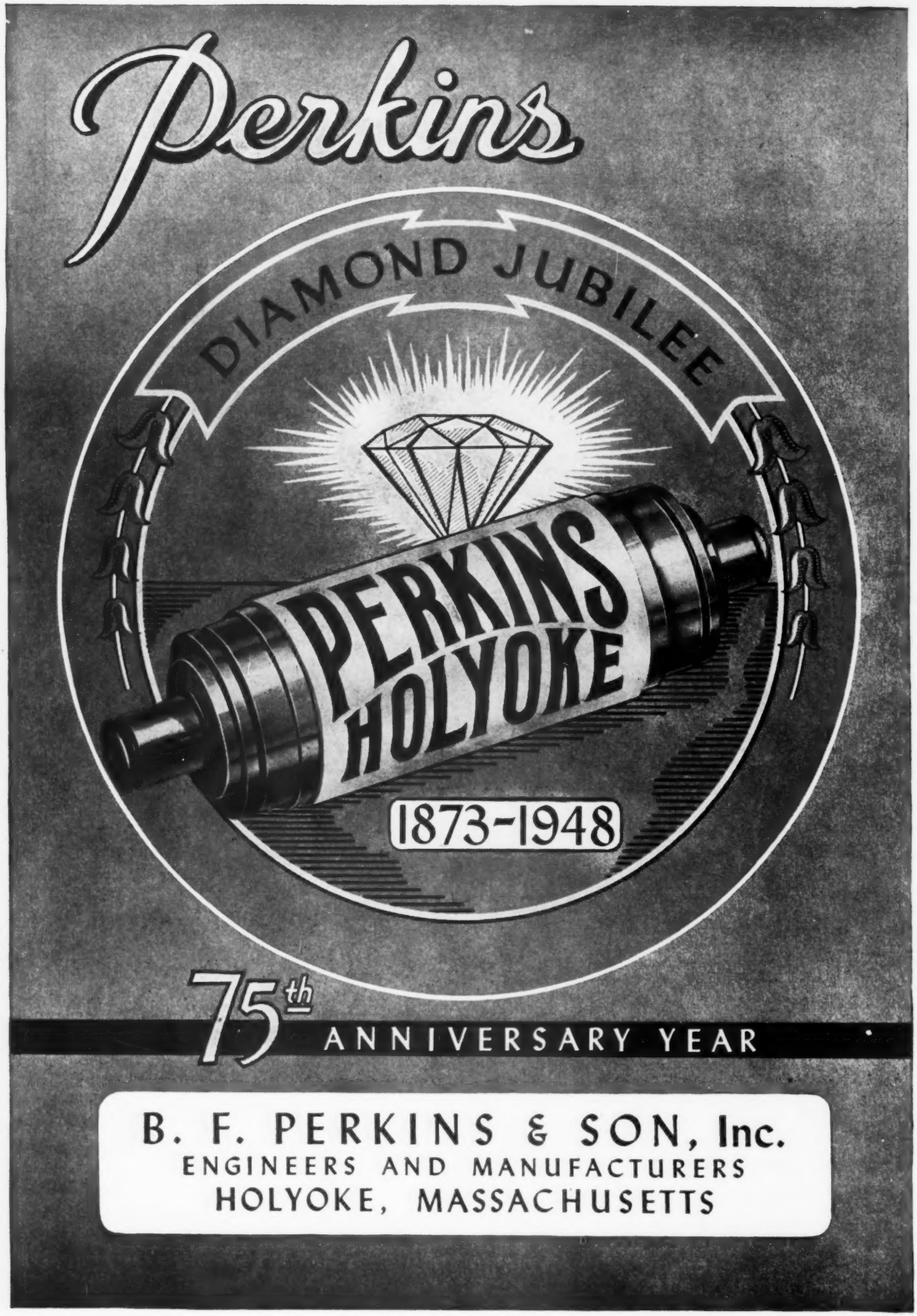
CONSUMPTION...



TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL

WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVE., NEW YORK 20, N. Y.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DIAMOND JUBILEE
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1873-1948
75th ANNIVERSARY YEAR
B. F. PERKINS & SON, Inc.
ENGINEERS AND MANUFACTURERS
HOLYOKE, MASSACHUSETTS

New

SPOOLERS

get the right start

for a long life...

In this progressive southern mill, the Superintendent of spinning (right) and the Overseer of spooling discuss the lubrication of this latest type spooler with the Gulf Lubrication Engineer (left).

when the Gulf Lubrication Engineer is "in the picture"

IF you're installing new spoolers—or any other new equipment—you'll want to insure your large investment as thoroughly as possible against premature mechanical failures, below-par performance, and high maintenance costs.

Here you'll find the services of a Gulf Lubrication Engineer very helpful. He will make a complete survey of each unit of equipment and study your particular operating conditions to determine their influence on lubrication.

After analyzing every important factor, he will recommend for every moving part a Gulf quality oil or grease which will provide maximum protection against wear. Then you can be sure you've made the right start—not only for a long life, but for a trouble-free life with low costs for maintenance.

For the co-operative counsel of a Gulf Lubrication Engineer, write, wire, or phone your nearest Gulf office today.

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SOILAGE LOSSES TURN TO *Profits*

*42,600 yards per month saved with Precipitron**

In one large southern mill it was standard practice to shut down looms at each cut mark to clean the reeds. Precipitron eliminated this fifteen minute cleaning operation except at the time the warp was changed. Saved: five hours per loom per month, or 8,280 loom hours—equal to 42,600 yards of woven fabric—each month. The yardage savings alone in one particular type of fabric, had a dollar value in excess of $13,000 per month.

WHEN *Precipitron**

TRAPS "INVISIBLE DIRT"

The high cost of soilage is no longer a "necessary evil" in the textile industry. For Precipitron eliminates the smudge-causing airborne carbon particles or soot, smoke, dust and dirt that result in off-quality, dark shades and seconds in finished production.

That's why so many leading textile mills have installed Westinghouse Precipitron as an integral part of the mill air conditioning and humidifying systems—for Precipitron affords three to five times the efficiency of ordinary mechanical air filters which trap only the larger particles. The smaller particles—which are as damaging as the larger ones —are trapped only by Precipitron which delivers air up to 90% clean by actual blackness test.

Investigate Precipitron now. It may make the difference between profit and loss in *your* operation. For complete information on how Precipitron can reduce soilage losses and upgrade and increase the production in your mill, call your nearest Westinghouse office.
Or write to: Westinghouse Electric Corporation,
Sturtevant Division, Hyde Park, Boston 36, Mass.

**Trade mark of the Westinghouse Electric Corporation, Sturtevant Division, Reg. U. S. Pat. Off.*

Westinghouse
Sturtevant Division

J-80014

"If it isn't Wide Enough It isn't Good Enough"

TO MEET TODAY'S PROBLEMS

This Extra Width "Cartridge" Bearing

PATENTED

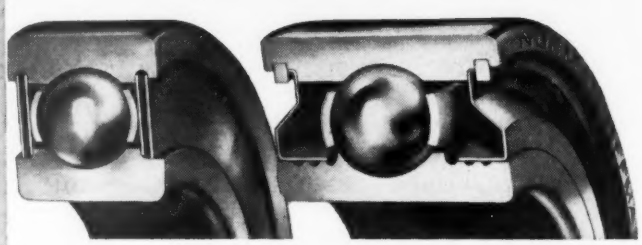
Gives You—

1. Longer Life Norma-Hoffmann Patented "Cartridge" Bearing has 100% greater grease capacity than conventional width sealed bearings. This means longer grease life... longer periods between relubrication ... because a large volume of grease does not oxidize or dry out as readily as a thin film of grease.

2. Greater Contact Area The 43% to 85% greater contact area between shaft and bearing bore and between housing and bearing O.D., as compared to conventional width bearing, eliminates need for locknuts. This results in greater shaft strength as it is unnecessary to cut threads for the locknuts. Slippage and peening are also prevented.

3. Full Load Carrying Capacity Unlike many sealed bearings, the Norma-Hoffmann "Cartridge" Bearing permits *full size* balls to be used; hence, there is no reduction in load carrying capacity.

Also available under license from Marlin Rockwell Corp., Jamestown, N. Y.



CONVENTIONAL Single Row Width sealed bearing has small grease capacity.

NORMA-HOFFMANN patented double row width "Cartridge" Bearing has 100% greater grease capacity.

America's No. 1 SEALED BEARING

NORMA-HOFFMANN "CARTRIDGE" BEARING

NORMA-HOFFMANN BEARINGS CORPORATION
STAMFORD, CONNECTICUT
FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Seattle, Phoenix

NOW... Redder Shades of Black

ON ACETATE RAYON WITH

Hydroxanil "2R"*

Hydroxanil 2R has been developed in answer to popular demand for redder shades of acetate black than those produced through the use of Hydroxanil G. Hydroxanil 2R has all the superior qualities of Hydroxanil G, including, superior wash fastness, resistance to sublimation and perspiration fading.

HYDROXANIL 2R is used in the same manner as Hydroxanil G, and is ideal for producing *wash fast* developed black on acetate and rayon combination materials through the use of acetate developed black and rayon developed black in place of rayon direct black.

With Hydroxanil G and Hydroxanil S, a new member of the Hydroxanil family, a complete line of fast developed colors can be obtained on rayon, cotton and union materials.

HYDROXANIL G (formerly simply Hydroxanil), Hydroxanil 2R, and Hydroxanil S are currently available in commercial quantities and may be used to great advantage not only for their superior qualities but also to replace B.O.N. and Beta Naphthol.

MARCO PRODUCTS

*Patent applied for

Let us solve your developer problems during these days of developer shortages

MAHER COLOR & CHEMICAL CO.

FACTORIES AND LABORATORIES

355 West Ontario Street, Chicago 10, Ill.
2327 East Eighth St., Los Angeles 21, Calif.

H&B

FLUTED ROLLS

P

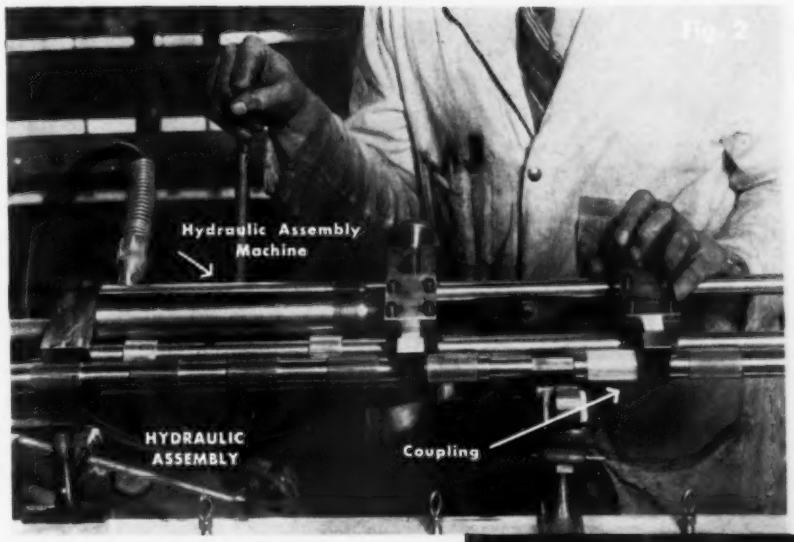
H&B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

IT'S THE LITTLE THINGS

that make a Big Difference



A new feature, and a forward development in H & B fluted rolls, is the coupling* recently designed to achieve a better fit between roll sections and thus assure accurate and true alignment of the complete drawing or feed roll. The connection between roll sections has always been a problem, and formerly it was necessary to individually match each pair and number the male and female ends to get a good fit. Even then, as can be seen in Fig. 1, the bearing fit was not so good as it is now.

Now, with H & B's exclusive, precision made coupling, precision assembled as in Fig. 2, the fit *is* perfect. Notice, in Fig. 1, how the male end has been evenly and tightly fitted all along its length. A further advantage of this new coupling is that it permits complete interchange of parts, an economy not possible with the old numbered sections.

Our fluted spinning rolls, their design and production improved, their high material and manufacturing standards maintained, are another example of the achievement of quality at H & B.

*Patent applied for

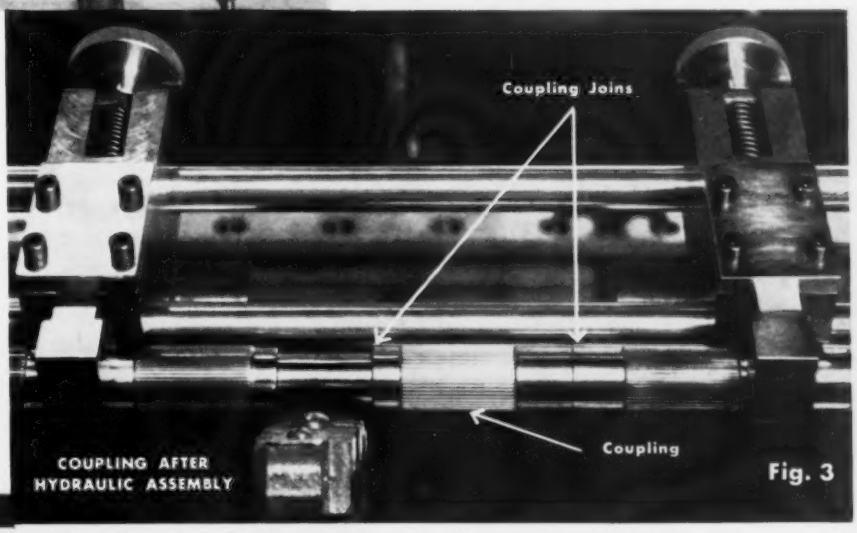


Fig. 3

MACHINE CO.

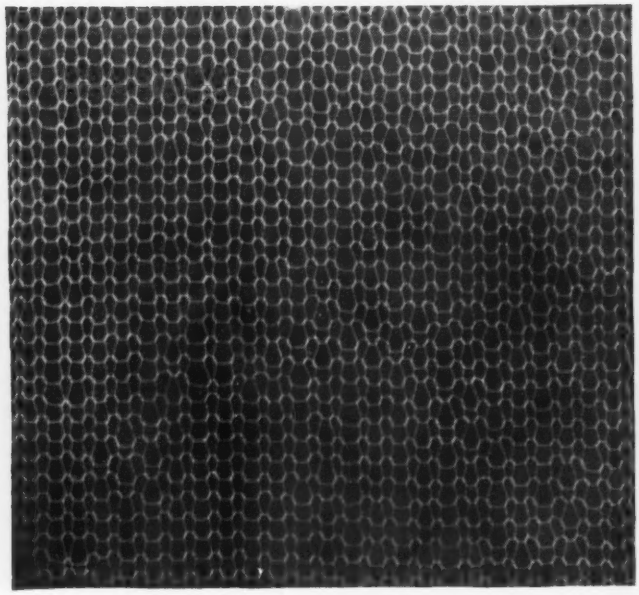
Textile Machinery

DIVISION PAWTUCKET, RHODE ISLAND, U. S. A.

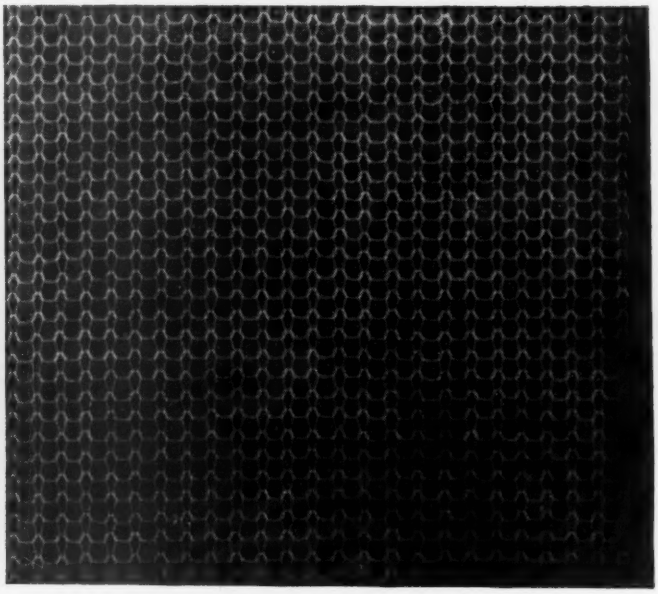
BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

Kōnrite

"TREATS" YARN "RIGHT"!



Here's fabric knit from conventionally treated yarn



Here's fabric knit from KŌNRITE treated yarn

See the Difference?

That's because KŌNRITE treated yarn gives the clear, perfect stitch formation so important in nylon hosiery of the finer grades. This new and unusual coning oil offers many other advantages, as well, that make for greater uniformity in Coning, Knitting and Seaming.

Write today for full information on KŌNRITE

NOPCO CHEMICAL COMPANY, HARRISON, N.J.

Formerly National Oil Products Company

BRANCHES: BOSTON • CEDARTOWN, GA.
CHICAGO • RICHMOND, CALIF.

NOPCO TRADEMARK EVOLVED THRU RESEARCH

KŌNRITE ...

- ▶ **produces cones of proper density. Overlaps, crossovers and underwinds are practically eliminated. Increases cone production besides.**
- ▶ **yields uniform cones. Its controlled viscosity assures even distribution of oil on the yarn.**
- ▶ **minimizes stripping of size in knitting. Reduces press-offs.**
- ▶ **permits rapid cementing of stitches, resulting in a clear and perfect fabric.**
- ▶ **reduces curling. Increases seaming production.**
- ▶ **prevents softening in lagged yarn and fabric.**

Kōnrite — **The Outstanding Nylon Coning Oil**

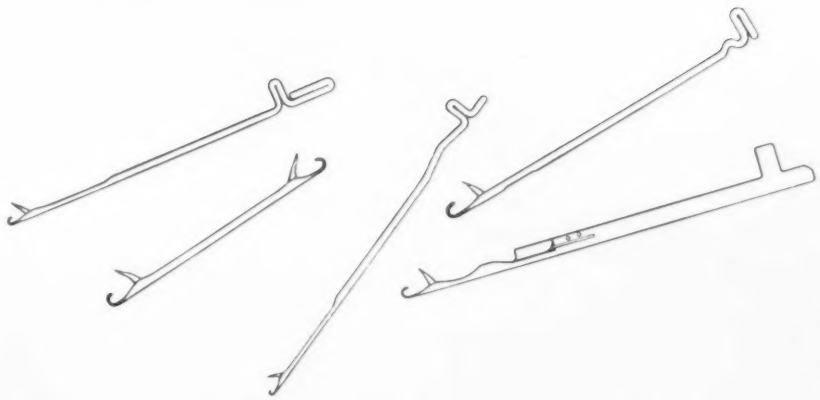
GOOD

KNITTING

DEMANDS

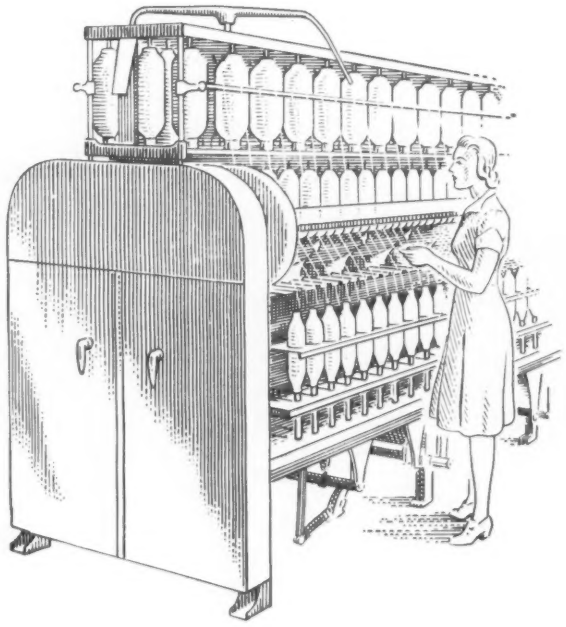
GOOD NEEDLES

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. Est. 1866
Branches: New York, Philadelphia, Chicago, Greensboro, N. C., Boston, St. Louis, Toronto, Canada. *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif.



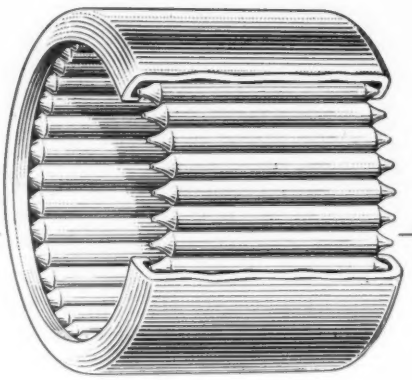
There's a **TORRINGTON** Needle

for every type of Knitting!



Higher Spindle Speeds and Heavier Packages Handled by Torrington Needle Bearings

The higher speeds and heavier packages handled by Torrington Needle Bearing equipped spindles are typical of the advantages gained by the application of these efficient anti-friction units in a wide range of textile machinery.



. . . compact, easy-to-install Needle Bearings readily applicable to improvement of existing spindle designs.

YOU only *begin* to realize the many advantages of Torrington Needle Bearings in the higher spindle speeds and heavier package loads they make possible. These efficient anti-friction units also save power. Their high radial capacity and simplicity of lubrication mean dependable operation for longer continuous periods. You can measure results in increased efficiency, in lower operating cost, and in reduced service attention.

It will be worth your while to call on the specialized experience of Torrington's engineers to assist you in adapting Needle Bearings to your textile equipment. Call or write the nearest Torrington office.

THE TORRINGTON COMPANY
Torrington, Conn. • South Bend 21, Ind.
District Offices and Distributors in all Principal Cities

TORRINGTON BEARINGS

NEEDLE
SPHERICAL ROLLER
STRAIGHT ROLLER
TAPERED ROLLER
BALL
LOOSE ROLLERS

Here's my New Year's resolution

START 1948 RIGHT, THIS WAY—
First, make a complete and honest survey of your equipment that will show you where it has not been standing up as it should; find out where your maintenance and repair costs and the expense of frequent machine adjustment are out of line because the construction materials you are now using do not measure up to the job.

Then, tell us under what conditions the equipment operates—the corrosive products it has to handle—what temperatures are employed—where erosion and wear are troublesome—the sort of abuse it must withstand. Tell us how much importance you place on freedom from rust, staining and bleeding—on faster machine operation and easier, more thorough cleaning.

Once we know these things, our stainless steel specialists will tell you which of the various types of U·S·S Stainless will best meet your needs ... and they'll show you, too, how and where this time-tested steel can be most efficiently and economically applied to obtain the results you desire.

We don't know of any better way to insure you a happier and more prosperous New Year.

USS STAINLESS STEEL — UNITED STATES STEEL

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

S-148

UNITED STATES STEEL AMERICAN STEEL & WIRE COMPANY, Cleveland, Chicago & New York
CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh & Chicago · COLUMBIA STEEL COMPANY, San Francisco
NATIONAL TUBE COMPANY, Pittsburgh · TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham
UNITED STATES STEEL SUPPLY COMPANY, Warehouse Distributors—Coast to coast: UNITED STATES STEEL EXPORT COMPANY, New York

NEW MANUAL PRESENTS

Pre-Engineered TEXROPE* DRIVES!

Selects Most Economical Drive for Any Installation!

NEVER BEFORE has specification of the *right* V-belt drive been made so simple, so unerring. You turn to a page, run down a column, and there, in *one place* is the drive you need . . . number of grooves, diameters of sheaves, size of belt. No turning from table to table, no figuring.

These *Pre-Engineered* stock Texrope drives cover 90% of all requirements. Texrope engineers have carefully selected each one, using economical *stock* belts and sheaves. Each selection is the *one best drive* for a given requirement of power, speed and dimension.

For the few cases not covered by *Pre-Engineered* stock drives, the manual provides complete, carefully arranged engineering data to make it easy to figure special drives.

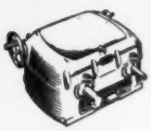
Now Available . . . 144 pages, indexed, size 8½ by 11 inches. The most complete V-belt drive manual ever published. A book that only Allis-Chalmers can give you. Copies have been sent to many Texrope dealers and users. If you have not received one, write for Texbook No. 20P40. ALLIS-CHALMERS, MILWAUKEE 1, WIS. A 2333

TEXROPE .. Greatest Name in V-Belt Drives

"Super 7" V-BELTS
Five Types — Sizes to suit every power transmission job.

Texsteel, Texdrive, "Magic-Grip"
— sheaves in a full range of sizes, grooves.

"Vari-Pitch" SHEAVES
Exact variations in speed, stationery or motion control.



SPEED CHANGERS
Speed variations up to 375% at the turn of a crank.

ENGINEERING
Finest V-Belt engineering talent in the world—at your call.

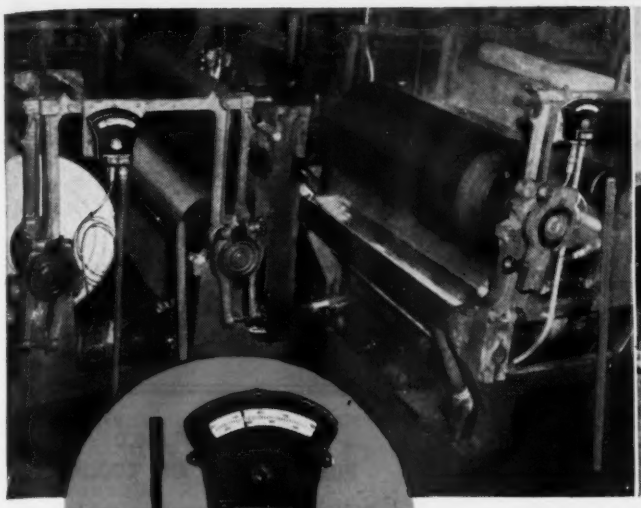
TEXROPE "Super 7" V-Belts result from the cooperative research of two great companies — Allis-Chalmers and B. F. Goodrich. They are sold only by A-C.

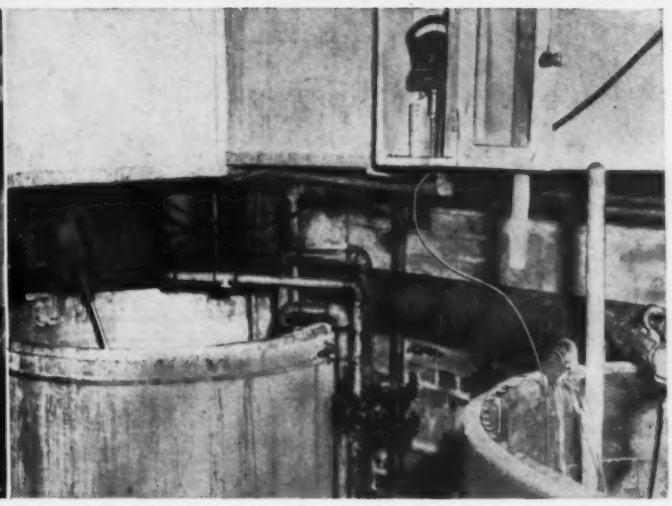
*Texrope, Super-7, Texsteel, Texdrive, Magic-Grip and Vari-Pitch are Allis-Chalmers Trademarks

ALLIS·CHALMERS

One of the Big 3 in Electric Power Equipment — Biggest of All in Range of Industrial Products

A CENTURY OF SERVICE to Industry THAT MADE America Great





LSI CONTROL

DYE JIGS, PADDERS *and* DYE BOXES

Temperature Controlled with

SARCO

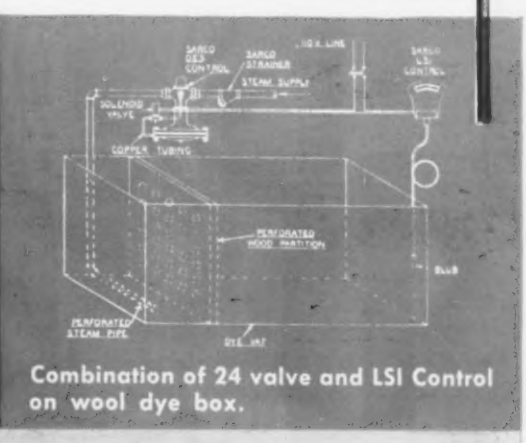
Uncontrolled heat means uncontrolled colors in the dyeing industry. And too much heat frequently ruins the cloth.

Sarco Electric Control, applied to every process, insures the entire plant operation. It increases production with less steam used because no heat is wasted. It reduces rejects and provides flexibility. A turn of the knob on the LSI control changes the temperature. This can be done as often as desired on a single run of cloth.

The Sarco LSI control is not expensive and is easy to install. Ask for Catalog No. 1025.

2430 CONTROL

193



Combination of 24 valve and LSI Control on wool dye box.

SARCO SAVES STEAM

SARCO COMPANY, INC.

Represented in Principal Cities

Empire State Building, New York 1, N. Y.

SARCO CANADA, LTD., TORONTO 5, ONTARIO

FORECAST

Today . . . tomorrow . . . always

IDEAL PROCESSING WEATHER

AMCO EVAPORATIVE COOLING AT PONEMAH IMPROVES YARN STRENGTH — AIDS SPINNING

Part and parcel of Ponemah's reputation for fine count cottons and rayons are the continuous efforts made to assure fabric superiority. An important recent step was the introduction of AMCO Evaporative Cooling.

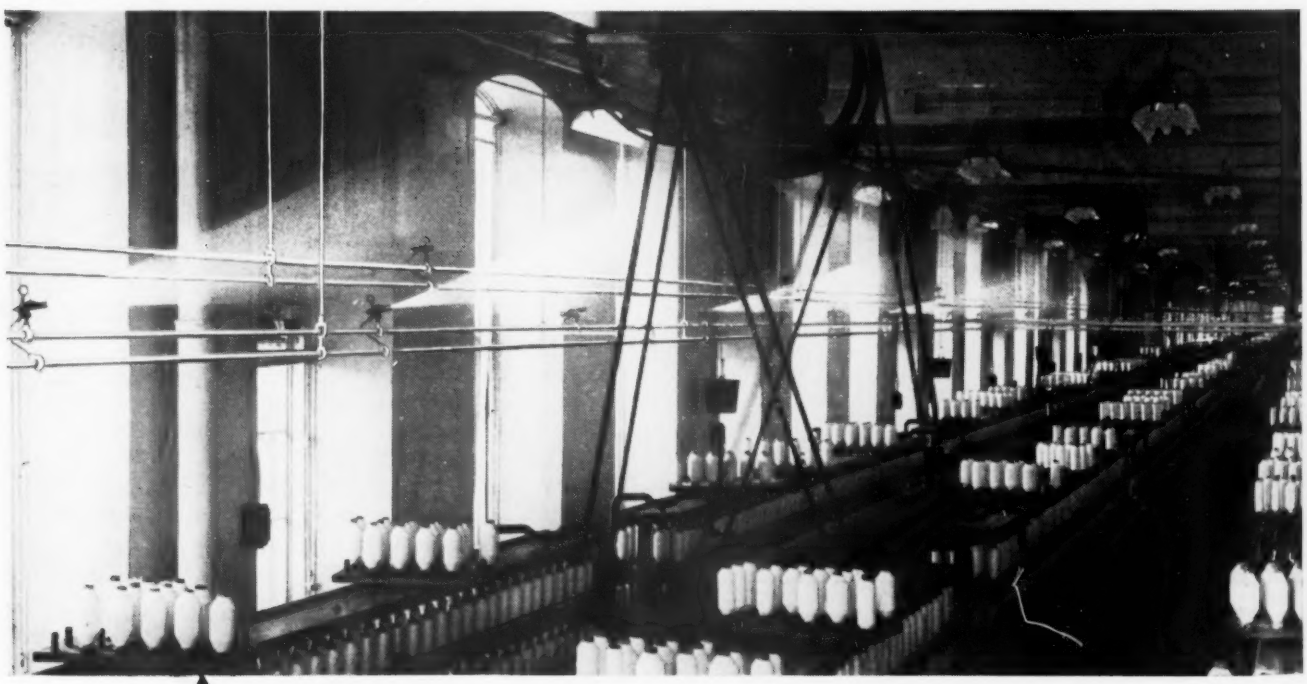
Ponemah already had humidification. The addition of AMCO Evaporative Cooling has proved a low-cost, practical way of meeting the excessive heat burden imposed by the spinning process. The results have been greater yarn strength, more efficient spinning, improved worker comfort.

AMCO Evaporative Cooling utilizes the humidification system to absorb the frictional heat of high speed machines in conjunction with carefully controlled airflow. No ducts or expensive alterations are needed. Installation can normally be made without serious interference with production.

Right now — see for yourself how quickly this system pays for itself with greater production, lower costs. An AMCO engineer will be glad to make a survey and submit recommendations for the exact system to meet the particular conditions and needs of your mill.

FEATURES OF AMCO HUMIDIFICATION AND COOLING

- ★ Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.
- ★ Speeds production in high friction (heat) areas.
- ★ Assures evener yarn counts and increases breaking strength.
- ★ Gradually increases regain for good roving and consequent better spinning.
- ★ Drafting of fibres smoother and more compact.
- ★ Waste and fly greatly reduced.
- ★ No cumbersome ducts to require cleaning and obstruct light.
- ★ Easier to install — minimum disruption.
- ★ High flexibility to meet changing room conditions.
- ★ Minimum maintenance.
- ★ Amco Evaporative Cooling utilizes your present humidification system.
- ★ Increases worker comfort.



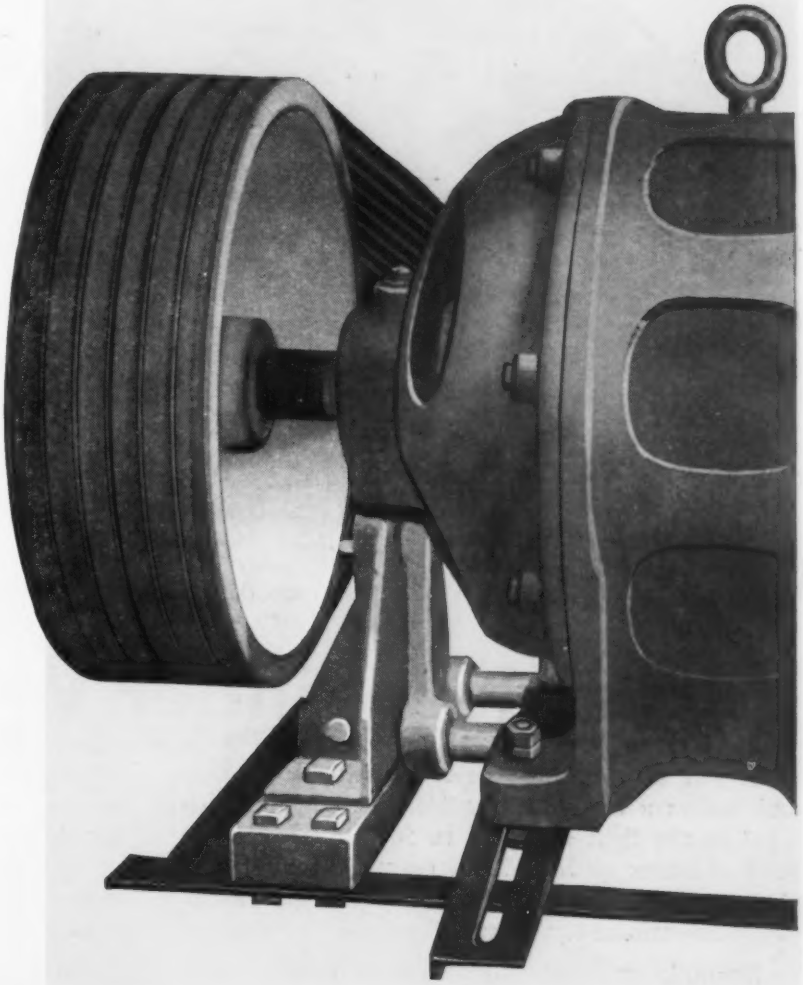
AMCO HUMIDIFICATION and COOLING

AMERICAN MOISTENING CO. AFFILIATED WITH GRINNELL COMPANY, INC. PROVIDENCE, R. I. · BOSTON · ATLANTA · CHARLOTTE

HOW TO TRIPLE THE LIFE OF *Your V-Belts!*

Real savings in time, money and labor like this can now be yours—thanks to *automatic* control of belt tension. By taking advantage of the torque reaction of the motor, American Econ-o-matic Drives instantly, *accurately* match belt tension to the load. As the load steps up, the motor rocks back in its cradle-type mounting and belts tighten. When the load decreases, belt tension is automatically reduced. Costly belt slippage is eliminated, bearings and belts last longer, and operation is smoother, more efficient. And think of the *extra* savings you get—over and above lower belt and bearing costs—through higher, steadier production, less down time for replacements!

Decide today to put the real, money-saving advantages of American Econ-o-matic Drives to work. For complete specification and installation data, write for the American Econ-o-matic Drives Handbook. Drop us a line, today.

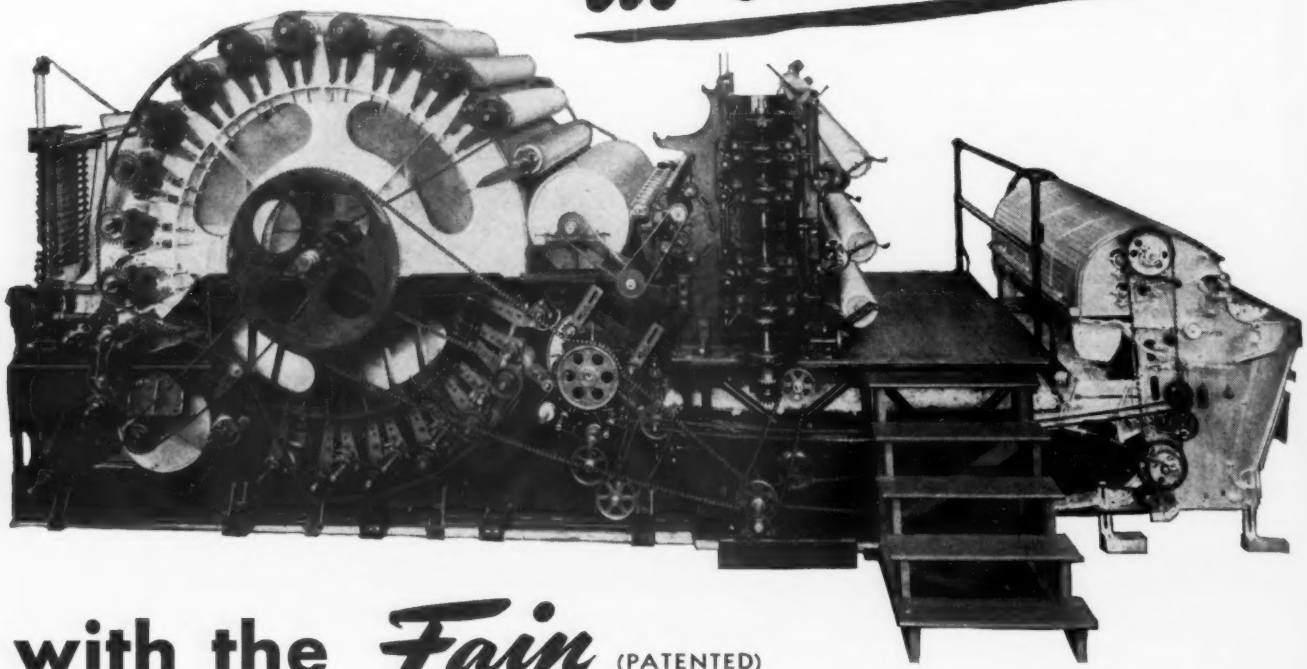


V-Belts had to be replaced every 60 days, bearings every 90 days—*before* the installation of an American Econ-o-matic Drive on this mill for grinding clay. Then, during the first 6 months of operation, belt and bearing replacements were entirely eliminated—resulting in a $90.00 saving in belt costs alone!

The American Pulley Company

4288 WISSAHICKON AVE., PHILADELPHIA 29, PA.

Greater Production at lower Cost



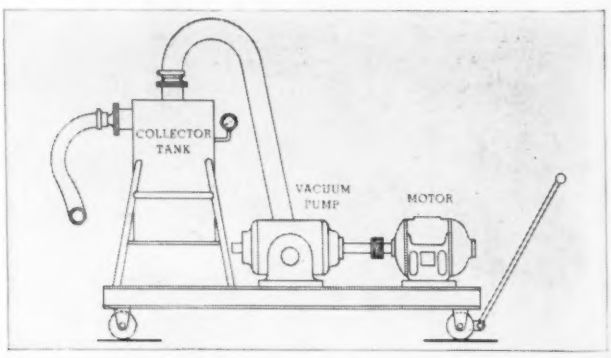
with the *Fain* (PATENTED) single cylinder WOOLEN CARD

If you are constantly beset by rising production and maintenance costs, consider the Fain Woolen Card in the light of its 25 to 50% greater roving yield of better quality . . . ⅓ normal driving horsepower and 50% reduction in floor space requirements over conventional equipment.

Skillfully engineered throughout, quality built right down to the last bearing, the Fain Woolen Card offers many other time and money saving advantages, too. For example, this high quality machine substantially reduces fly waste, simplifies accurate settings, cuts stripping time . . . the 100% positive drive and modern enclosed bearings lower maintenance cost, while strong fabricated construction reduces weight and does away with any possibility of casting breakage. Either of the two available models can be shipped as a ready-to-run unit, complete with card clothing.

Investigate what this revolutionary development in wool carding equipment can do for you. Write for descriptive bulletin giving all the facts.

New portable vacuum stripper (capacity, 15-sets of cards) now available as auxiliary equipment to simplify the stripping problem.



BUILDERS OF TEXTILE MACHINERY

New England

MACHINE WORKS

574 E. MAIN ST., WATERBURY, CONN., U. S. A.

UNION SPECIAL

Setting the PACE!

THE machines you order now are the tools you will depend on for tomorrow's profits. Now being produced in steadily increasing numbers, Union Special's new *LOCKSTITCH* is truly A MACHINE WITH A GREAT FUTURE! It's the machine that's designed and built to set the pace in the race to cut costs . . . boost output . . . improve quality. If you are planning for *modern* production, make the new Union Special *LOCKSTITCH* a part of your plans!

The LOCKSTITCH

● Performance plus! Better . . . faster . . . smoother . . . everything you want! Ask for a copy of bulletin No. 258 describing Union Special's new streamlined *Class 613000* single needle *LOCKSTITCH* machines.

● **SMOOTH, EFFORTLESS SPEED** — Made possible by new lightweight needle bar . . . magnesium take-up . . . needle bearings . . . scientific counterbalancing . . . ultra-finished bearing surfaces.

● **QUIET, DEPENDABLE OPERATION** — Isolated from table board by new mounting method. Design includes new automatic lubrication for the lower mechanism; screw-conveyor oil feed for the hook-raceway—an exclusive Union Special feature providing positive controlled lubrication to the hook without a pressure pump; quick, external adjustment for hook oil flow regulation; and new oil level sight-gauges.

● **STYLES.** The new streamlined *Lockstitch* is being built in "low throw" *Style 61300 H* with 1-9/64" needle bar travel for work on light and medium weight materials and "high throw" *Style 61300 J* with 1-13/64" needle travel for medium to medium heavy work.

INDUSTRIAL SEWING MACHINES

UNION SPECIAL MACHINE COMPANY • 403 N. FRANKLIN ST., CHICAGO 10, ILL.

SUN "JOB PROVED" PRODUCTS CUT COSTS, SPEED PRODUCTION, IMPROVE QUALITY

Proof of the value of any industrial product lies in the experience that practical men have had with it. Sun products have been "Job Proved" in the lubrication of almost every type of mining, manufacturing, power and transportation equipment . . . in refrigeration and air-conditioning . . . in metal cutting, tempering and quenching . . . in the processing of textile fibers, leather, natural and synthetic rubbers . . . in the impregnation of electrical, electronic, and packaging materials of various kinds.

To help you find solutions to problems in any of these fields, Sun Oil Company offers a wide selection of "Job Proved" petroleum products, plus the experience of Sun Engineers. Their know-how and detailed product information are yours for the asking, without obligation. Telephone your local Sun office, or write Dept. T-1 . . .

SUN OIL COMPANY
Philadelphia 3, Pa.

"JOB PROVED" PETROLEUM PRODUCTS FOR INDUSTRY

SUN INDUSTRIAL OILS

SOLNUS OILS — Well-refined straight mineral oils. Stand up under hard use for long periods of time. Recommended for use in the machine tool industry, in air compressors, certain types of Diesels, etc.

SUNVIS OILS — Are in the same category as Solnus Oils with the difference that, in addition, they meet practically all paraffinic and high V.I. oil specifications.

OCNUS OILS — Low carbon-content oils, containing an additive which minimizes oxidation and gives detergency. Ideal lubricants for internal combustion engines subjected to continuous heavy loads under the most adverse operating conditions.

DYNAVIS OILS — Low pour point inhibited oils which help prevent formation of harmful corrosive and sludge-forming acids. Well-suited for engines fitted with alloy bearings and operated at high temperatures.

SUNTAC OILS — 100% petroleum products which have been treated to increase their adhesiveness. Recommended for general lubrication in all industries where sudden shocks and reversal of loads take place. These oils cling to the parts to be lubricated.

CIRCO OILS — Used for general lubrication of industrial machinery when straight mineral oils are required.

SUNISO REFRIGERATION OILS — Have extremely low pour points and long life stability characteristics. Initially neutral and resistant to formation of detrimental acids under service conditions. The most outstanding oils in the refrigerating and air-conditioning fields.

STEAM CYLINDER OILS — High flash and fire point lubricants for either saturated or superheated steam conditions and for worm gear speed reduction units.

SUN CAR JOURNAL OILS — Dark oils meeting A.A.R. Specifications. For use on railroad cars and waste-packed bearings of railroad equipment.

SUN DELAWARE OILS — Dark oils for general lubrication on older type industrial machinery.

SUNOCO WAY LUBRICANT — Has good metal-wetting and adhesive properties, ample viscosity and E.P. qualities. For use on tableways, as it eliminates chatter and scoring . . . resists corrosion.

SUN MARINE ENGINE OILS — Compounded with special emulsifying agents in order to provide adhesion to and lubrication of working parts in the presence of water. For the lubrication of bearings, eccentrics, cross-heads and various other parts of steam engines.

ROCK DRILL OIL — Heavy-duty adhesive type oil. For use in jack-hammers, stopers and drifters on heavy-duty mining operations.

SUNVIS 900 SERIES TURBINE OILS — High V.I., predominantly paraffinic oils, of uniform 0°F. pour points, containing additives to give high oxidation stability and corrosion resistance under practical operating conditions. Modern oils for turbine and hydraulic systems.

SUN INDUSTRIAL GREASES

SUN CUP GREASES — Water resistant. For grease cup and grease gun application when the service is not severe.

SUN GUN GREASES — Smooth greases made with medium viscosity oil. Stable under pressure in power guns or booster guns.

ADHESIVE PRESSURE GREASES — Won't drip or splash and are excellent lubricants for open gear applications.

SUN DARK PRESSURE-SYSTEM GREASES — For power-driven central grease lubricating systems in heavy industries. Can also be used as a "medium cup grease."

SUN MINE CAR GREASES — Available in several grades. Suitable for both anti-friction bearings and plain bearing cavity-type wheels.

SUN ROLLER BEARING GREASES — For use on electric motors and generators and other high-temperature machinery equipped with ball or roller bearings.

SUN GEAR COMPOUNDS — Black adhesive open gear compounds and wire cable greases. Recommended for open gears on metalworking power presses, mining machinery, old reduction mills, crushers, pump gears, etc.

SUN MINING MACHINE LUBRICANT — Semi-fluid. For use where a light but adhesive type grease is required. Free from separation or decomposition.

SUNOCO TRACTOR ROLLER COMPOUND — For miscellaneous parts of caterpillar or crawler-type tracks. Provides good lubrication with exceptional sealing qualities.

SUN METALWORKING OILS

SUNICUT — Straight or non-emulsifiable transparent cutting oils. Recommended for automatic screw machines and for heavy-duty machining operations.

SUN INDUSTRIAL

SUNOCO EMULSIFYING CUTTING OIL—A self-emulsifying oil which produces a stable white emulsion when mixed with water. Sunoco is an efficient and economical cooling and lubricating medium for turning, milling, drilling, and other metalworking operations on both ferrous and non-ferrous metals. It is also an excellent grinding coolant.

SUN QUENCHING OILS—Specially refined oils designed to develop maximum physical properties in a wide variety of steels.

SUN TEMPERING OILS—Specially refined oils for tempering steel up to 550°F. Due to their low carbon content and stability under heat, these oils have an unusually long service life.

SUN ROLLING OILS—Straight and emulsifying oils which will permit maximum production in rolling steel, aluminum and brass.

SUN ANTI-RUST COMPOUNDS—Petroleum base oils with chemical additives designed to prevent the rusting and corrosion of steel.

SUN PROCESSING OILS

SUNOTEX TEXTILE OILS—Designed to impart certain additional properties to various forms of fibers during their processing from the fiber state into a manufactured product. All Sunotex textile oils are emulsifiable in water.

SUN COTTON CONDITIONING OILS—Pale mineral oils which condition the cotton. They prevent waste by cutting down excessive amounts of "fly" or fine air-borne particles of lint.

SUN ASBESTOS FIBER CONDITIONING OIL—Used for spraying on the asbestos during processing. Fibers are not so readily damaged or broken down into harmful dust when this product is used.

SUN CORDAGE OILS—Are adaptable in various formulae used by cordage manufacturers. They are selected products which are highly compatible with additives.

CIRCOSOL—2XH (Rubber Processing)—An elasticator and processing aid for GR-S particularly.

CIRCO LIGHT PROCESS OIL (Rubber Processing)—A processing aid and excellent softener for natural rubber, natural rubber reclaims, and neoprene synthetic rubber particularly. Used for GR-S to some extent.

SUNDEX 53 (Rubber Processing)—An inexpensive product suitable for processing GR-S and blends of GR-S and natural rubber. An established outstanding processing aid for footwear rubber stocks.

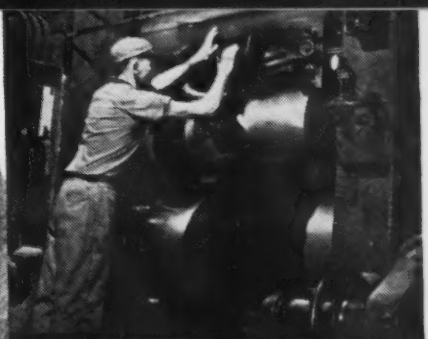
CIRCOMAR-5AA (Rubber Processing)—A black colored product used in reclaiming natural rubber scrap. Used also as substitute for asphalt fluxes in processing natural and GR-S rubber. Free-flowing at room temperature.

SUN LEATHER OILS—Mineral base leather oils. Used for obtaining the desired tensile strength, proper temper and a controlled moisture content. They maintain a light even color . . . mix well . . . distribute evenly.

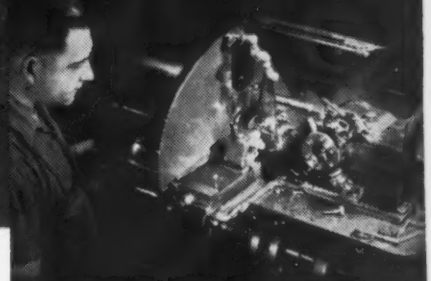
SUN MISCELLANEOUS INDUSTRIAL PRODUCTS

SUN SPIRITS—For the thinning of paints, varnishes, and enamels. Also for metal cleaning. This product is a pure water-white petroleum solvent and is free of corrosive sulphur.

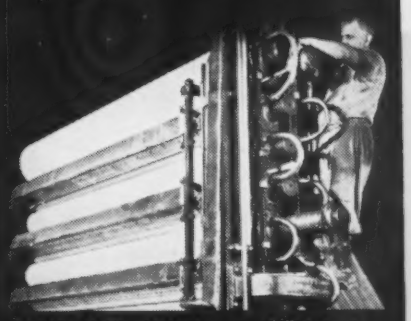
SUN WAXES—Used in packaging, sealing, coating, waterproofing and for numerous manufacturing and chemical processes.



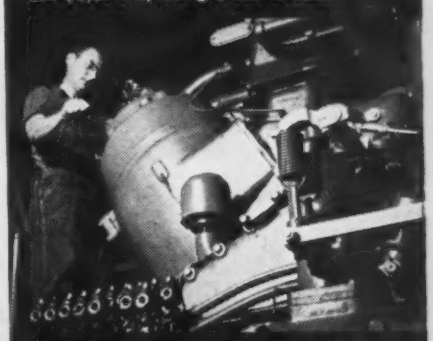
RUBBER MANUFACTURER saved $3,000 a year with a Sun Processing Aid.



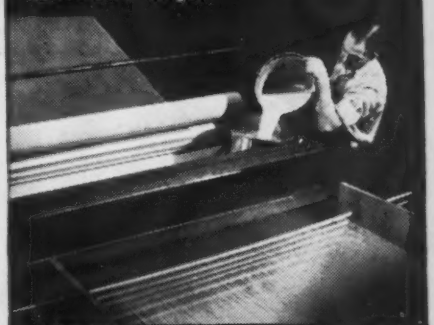
ALUMINUM PARTS MANUFACTURER increased output 43% with Sun Cutting Oil.



PAPER MILL slashed annual lubrication bill $2,874 by using a Sun Grease.



POWER PLANT found Sun Diesel Lubricant lasted 50% longer.



A TEXTILE MILL increased slashing speed 60% by adopting a Sun Processing Oil.

PRODUCTS

SUNOCO

worsted textile machinery

● GROUP OF NOBLE COMBS

Modern Machinery gives highest efficiency

WASHING, DRYING, CARDING, COMBING, DRAWING & SPINNING MACHINERY—ENGLISH AND CONTINENTAL SYSTEMS

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HEYDEN chemicals serve the nation's industries

TEXTILES AND LEATHER

FORMIC ACID
FOR

TEXTILES	LEATHER
Dyeing of acid colors	Dyeing with acid colors
Sour to prevent yellowing	Deliming and pickling
After-treatment of sulfur colors	Swelling and soaking
Wool treatment in mothproofing	Disinfection
Acid wash after dyeing or resin treatment	Mold-prevention
	Chrome and vegetable tans

SODIUM FORMATE
FOR

TEXTILES	LEATHER
Mordant in dyeing or printing	Chrome tanning for "full" and "round" feel
Humectant	

FORMALDEHYDE, SOLUTION U.S.P.
FOR

TEXTILES	LEATHER
Wool stabilization	Formaldehyde tanning
Crease- and crush-proofing	Combined tanning
Textile resins	Vegetable tanning
Splash-proofing	Disinfecting
Absorbency control	

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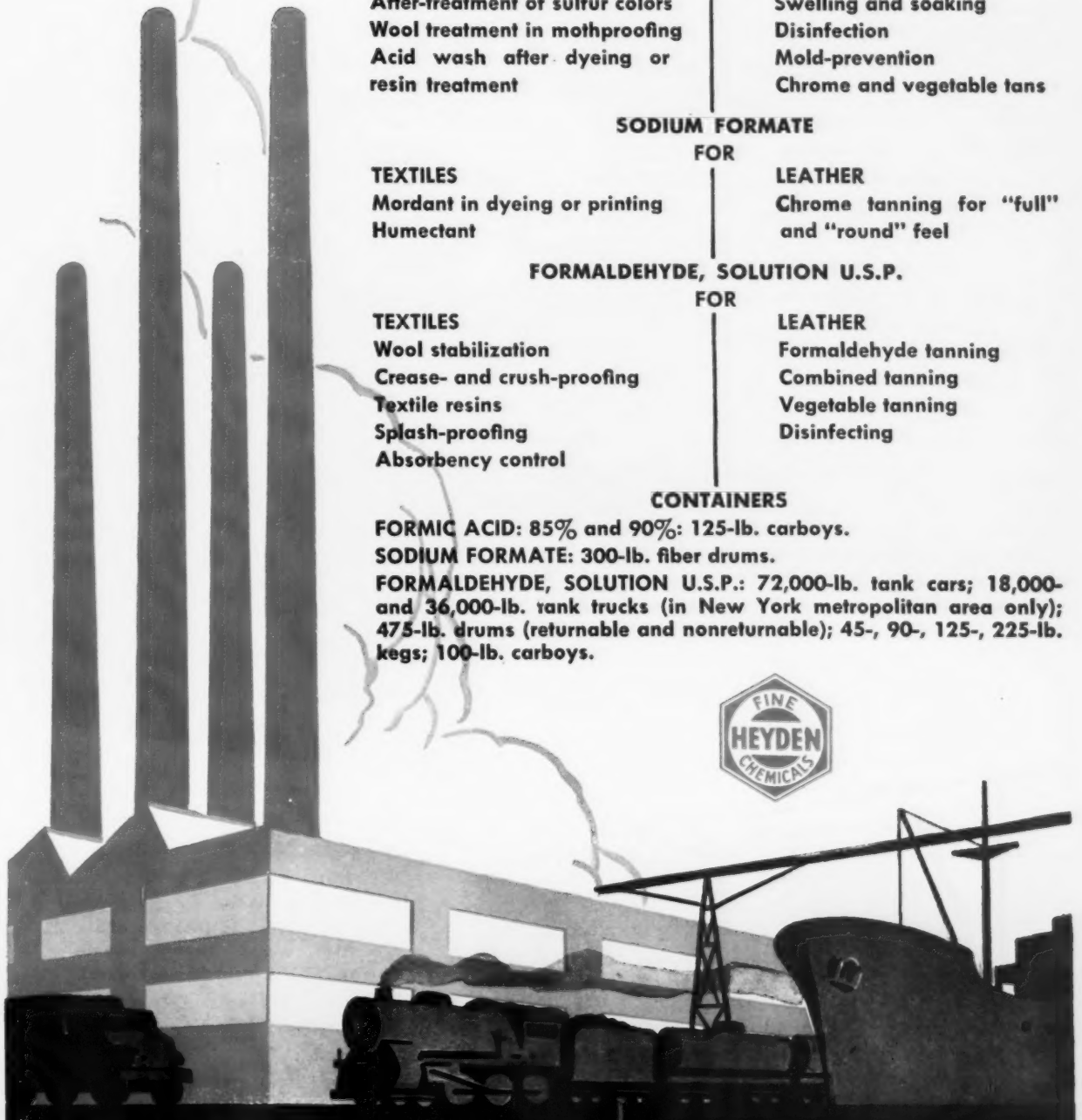
FORMIC ACID: 85% and 90%: 125-lb. carboys.

SODIUM FORMATE: 300-lb. fiber drums.

FORMALDEHYDE, SOLUTION U.S.P.: 72,000-lb. tank cars; 18,000- and 36,000-lb. tank trucks (in New York metropolitan area only); 475-lb. drums (returnable and nonreturnable); 45-, 90-, 125-, 225-lb. kegs; 100-lb. carboys.

FINE HEYDEN CHEMICALS



HEYDEN CHEMICAL CORPORATION
393 SEVENTH AVENUE, NEW YORK 1, N. Y.
CHICAGO OFFICE, 20 North Wacker Drive
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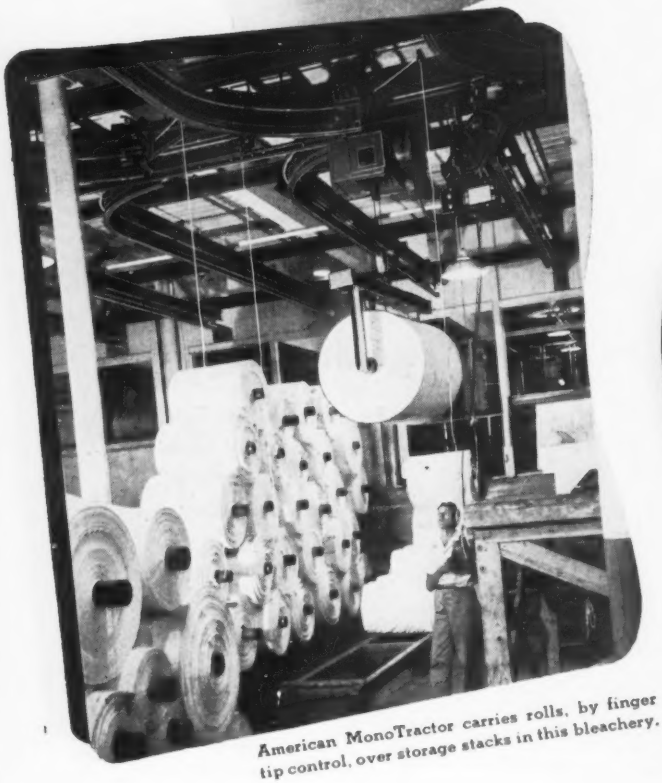
Cloth Rolls go UP and OVER



American MonoTractor carries rolls, by finger tip control, over storage stacks in this bleachery.

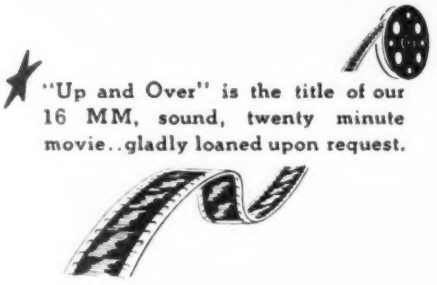
Rolls of cloth go up with chain hoist operating on American MonoRail 1-ton hand-pushed interlocking crane. Spur tracks permit the hoist to serve all machines in the finishing room.

Many textile mills are eliminating much of their floor congestion by installing American MonoRail "Up and Over"* Handling Systems.

In these particular mills, cloth rolls are raised and transported overhead to other departments. Increased production at lower costs has resulted.

With "Up and Over" type of handling from receiving to shipping, an overhead track or crane system does a better, quicker job with less maintenance.

Let an American MonoRail engineer show you how an overhead system will increase your production and pay for itself in a very short time.



"Up and Over" is the title of our 16 MM, sound, twenty minute movie..gladly loaned upon request.

THE AMERICAN MONORAIL COMPANY

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Century Splash Proof
Squirrel Cage Motor

Century Splash Proof
Slip Ring Motor

Century Splash Proof Motors

PROTECTED—

FROM A TRICKLE OF LIQUID TO THE FULL FORCE OF A HOSE DURING PLANT WASHDOWN

Century Splash Proof Direct
Current Motor

From a trickle of dripping liquid to the full force of a hose during a plant washdown, Century Splash Proof motors will keep the vital parts of the motor dry — keep them in service longer. They eliminate unnecessary production losses due to dripping or splashing liquid or falling solids which might otherwise damage the vital parts of the motor.

Century Splash Proof motor windings are insulated to resist the damp atmospheres found where splash proof design is recommended. Special insulations are often provided for unusual concentrations of acids and alkali. This gives you additional protection against costly work stoppages.

These motors are ideal for installations on such equipment as pumps, conveyors, agitators, washers, dryers, and many others often encountered in food, chemical, and textile processing.

Century builds a complete line of fractional and integral horse power electric motors in the popular sizes to meet the requirements of industrial, commercial and appliance needs.

Specify Century for all your electric power requirements.

566

Century C Motors

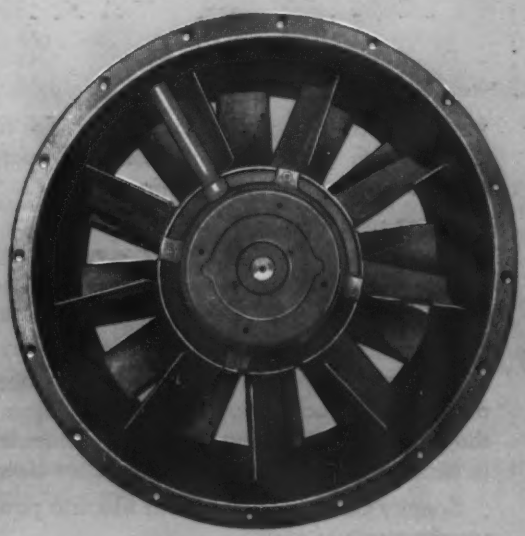
CENTURY ELECTRIC CO. 1806 Pine St., St. Louis 3, Mo.

Offices and Stock Points in Principal Cities

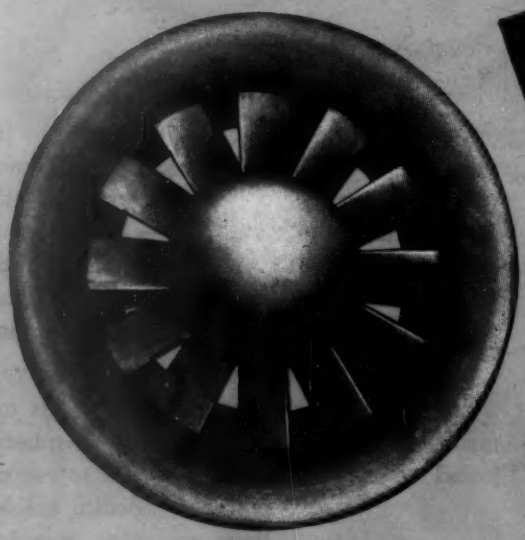
The greatest advance in Fan Engineering in a decade!

JOY
"SERIES 1000"
AXIVANE FANS

**Utilizing the Vaneaxial principle—
permitting high efficiences, low installation costs
and many other outstanding advantages to the user.**



Rear view, showing vanes and motor.



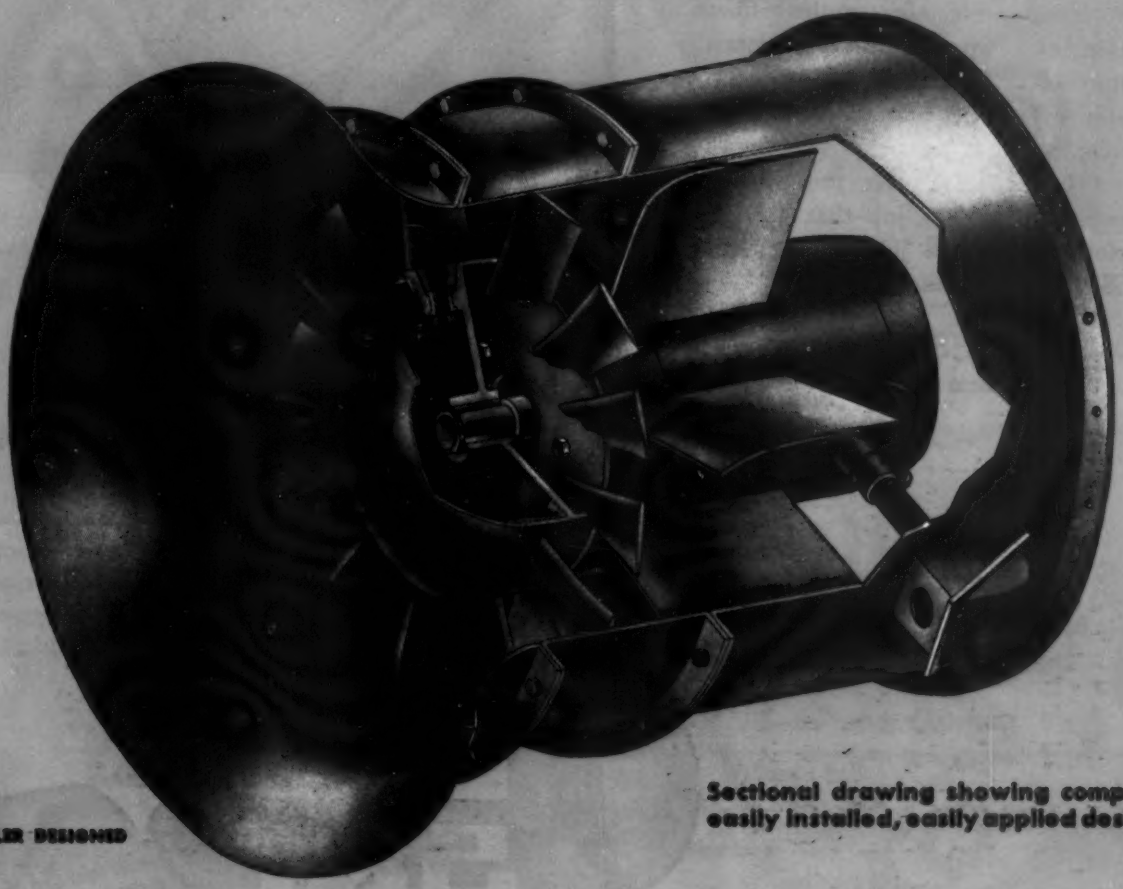
Front view, showing simplicity of construction.

Call for a Joy Engineer

JOY FANS

Joy Axivane Fans offer exclusively the obvious advantages of "on-the-job" blade adjustment –

Adjustable Blades, insures maximum performance efficiency and flexibility. Blades are adjustable on-the-job by loosening just one lock nut, enabling correction of duct resistance and providing wide pressure ranges.



TROLLER DESIGNED

Sectional drawing showing compact, easily installed, easily applied design.

Write for descriptive Bulletin illustrating various general industrial applications. Now ready!

WSD 1-1057

JOY MANUFACTURING COMPANY

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SELF-ALIGNMENT

For *Textile* Machines

• *Built by*
THE CENTRIF-AIR MACHINE CO., INC.

When the self-aligning bearing was originated by SKF, the Textile Industry was one of the first to use it. Today, SKF Self-Aligning Ball Bearings are on textile machines everywhere. An example is this Elevator Type SUPERIOR Opening and Blending Machine used for opening and blending synthetic fibers, cotton and wool. The self-aligning feature of SKF Ball Bearings on six beater cylinders prevents binding and eliminates shaft strains. When *you* select bearings for your products, remember this: The job that calls for Performance is the job that demands SKF-equipped machines. 6382

SKF INDUSTRIES, INC.
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Every textile man knows that the success of his processes and the appearance of his finished fabrics are dependent upon process water quality.

But are you getting the benefit of the great advances that have recently been made in the methods of water treatment and the designs of water treating equipment?

Revolutionary developments in these methods and equipment have vastly improved the results and reduced the cost of treating water for process work, steam generation and general plant services. The LIQUON engineers and chemists, with more than 30 years of experience to guide them, have pioneered in these advances, and have originated many of the developments in water treatment for textile plants.

Write today for information about the MODERN processes and equipment offered by LIQUON. The coupon will bring you this information without obligation.

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Please send me information on water conditioning for textile plants without obligation to me.

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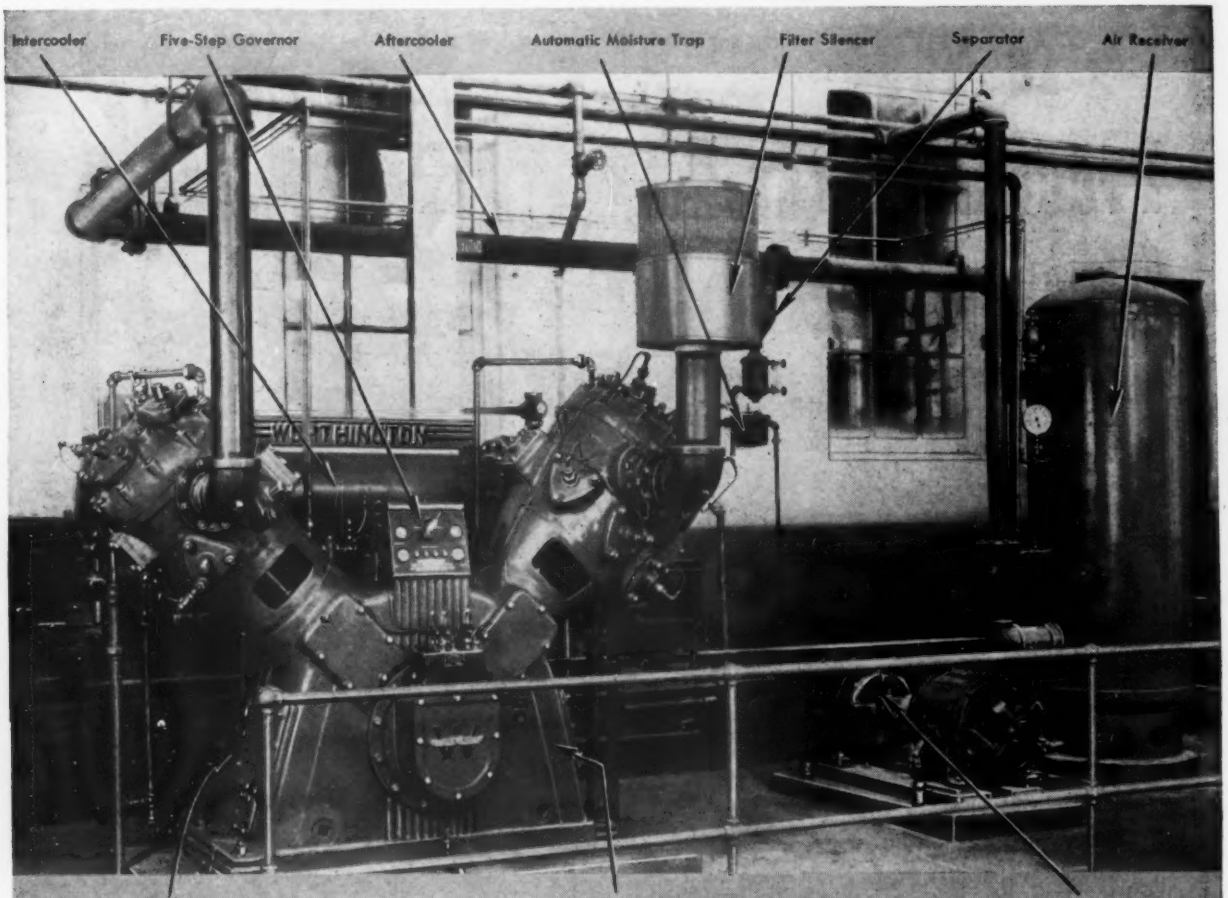
WORTHINGTON ALL THE WAY!

A Modern, Efficient Compressed Air Plant...Engineered Entirely By Worthington



Here's every element of an up-to-date compressed air plant in surprisingly little space! Note, too, the Worthington YC Compressor's small, inexpensive foundation. Then remember that the YC needs no alignment or erecting engineer and you'll realize you're looking at a big reduction in installation costs.

Plus HIDDEN Advantages Like These:

Power factor improvement from the synchronous motor and quick-acting, 5-step governor . . . completely automatic control for the entire system, as in the largest compressed air plants . . . advanced YC design that assures a longer-lived, cooler and smoother running compressor, with maintenance and operating expenses at their lowest.

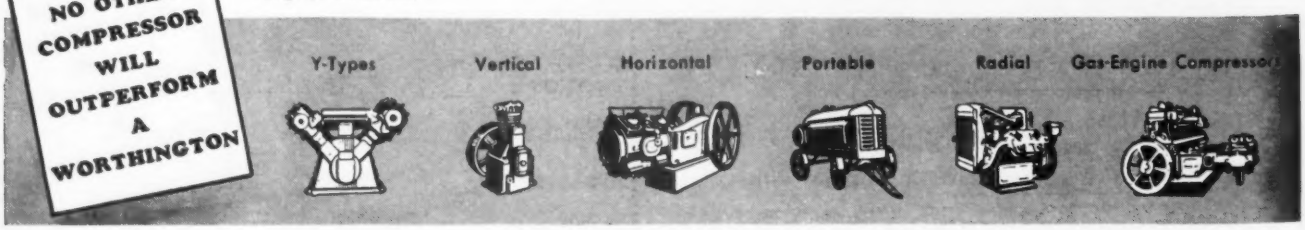
Write for further facts that prove *there's more worth in Worthington.* Bulletin L-667-B1A tells the complete story of how YC Compressors can cut your air costs. *Worthington Pump and Machinery Corporation, Compressor Division, Buffalo, New York.*

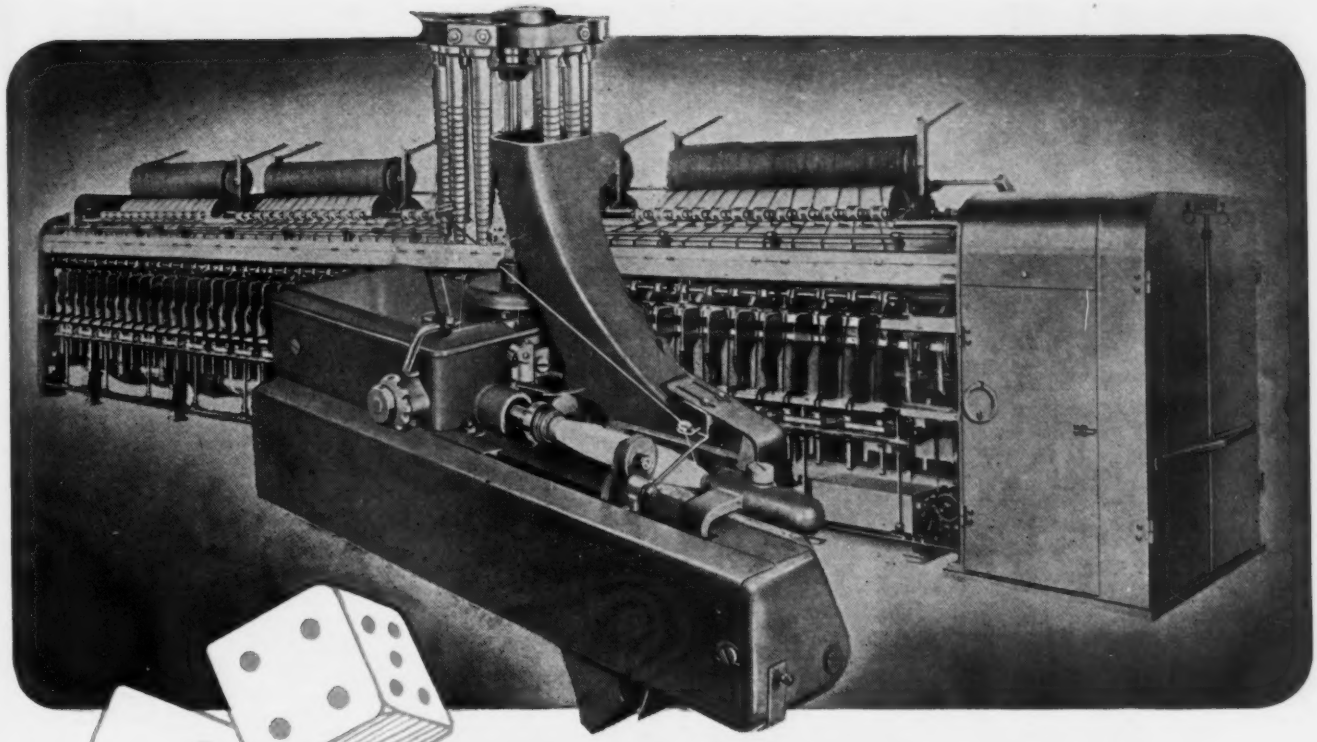
K7-16

WORTHINGTON

NO OTHER COMPRESSOR WILL OUTPERFORM A WORTHINGTON

*Reg. U. S. Pat. Off.





HERE'S A NATURAL COMBINATION

. . . that isn't a gamble!

Whitin large-package Wool Spinning Frames and Whitin-Schweiter Automatic Filling Bobbin Winders make a combination that you can bet on with certainty. There's no question of gambling on these two machines. They were designed and built to work together and they do just that.

With the Whitin Wool Spinning Frame you are assured of:

1. **Higher production — lower costs**
2. **Stronger, more even yarn**
3. **Large packages — more yarn — fewer knots**
4. **Up to 50% saving in floor space**

Add these special advantages of the Whitin-Schweiter Automatic Filling Bobbin Winder:

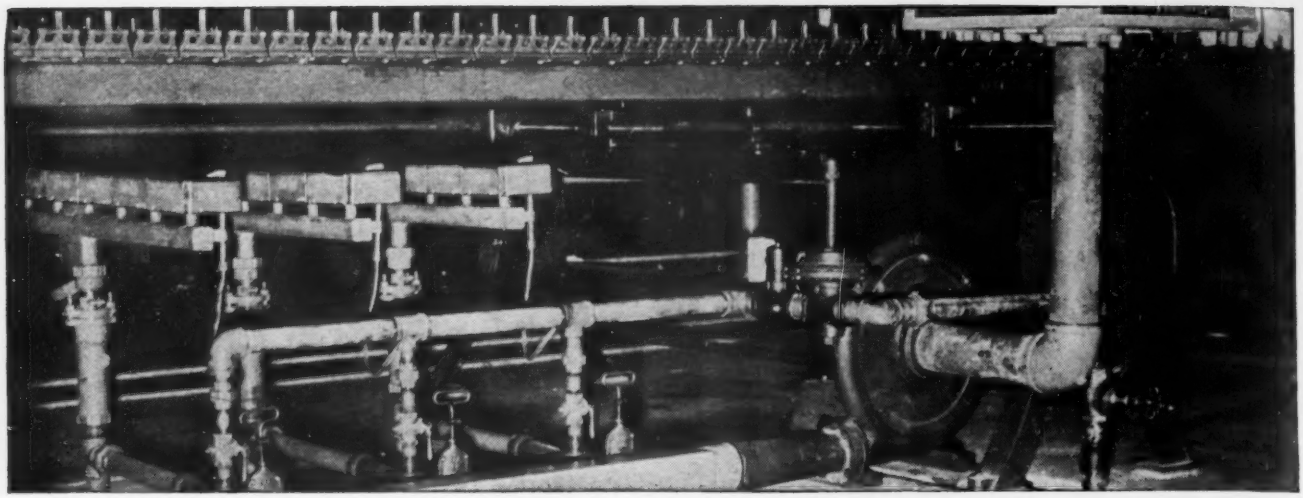
1. **Faster operation — speeds up to 5000 R.P.M.**
2. **Winds all types and lengths of filling bobbins up to 10⅛"**
3. **Independent spindle control means higher efficiency**
4. **Versatility — Rewinds not only wool, but many other fibres**

Mills using these two machines will soon discover — as have many others — that this is truly a natural combination that's sure to pay off in increased efficiency and large profits.

Write today for descriptive literature on both Whitin Model "E" Wool Spinning frames . . . and Whitin Automatic Filling Bobbin Winders.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA.



Placed under the frame of open tenter the Gas-Fired Radiant Ceramic Burners expedite piece drying of rayons and acetates.

IMPROVE FABRICS
INCREASE PRODUCTION
WITH THE PRODUCTIVE FLAMES OF GAS

Producers and processors of every type of synthetic and natural fabric report similar successes in applying the productive radiance of GAS wherever heat is required in textile manufacturing.

Textile productioneering tools employing GAS for drying, singeing, sizing and other processes are credited with

- **Improving loft of hand**
- **Eliminating print smudging**
- **Increases of 50% to 80% in drying speed**
- **Improving color fastness**
- **Increasing life of palmer blankets by more than 50%**

In each of these examples, and in hundreds of other substantiated cases, there's profit—proof of the advantages of GAS and modern Gas-Fired Textile Processing Equipment. You'll want complete details of manufacturing economies and production increases made possible by application of the productive radiance of GAS. Your local Gas Company Representative has accumulated this information for you.

AMERICAN GAS ASSOCIATION

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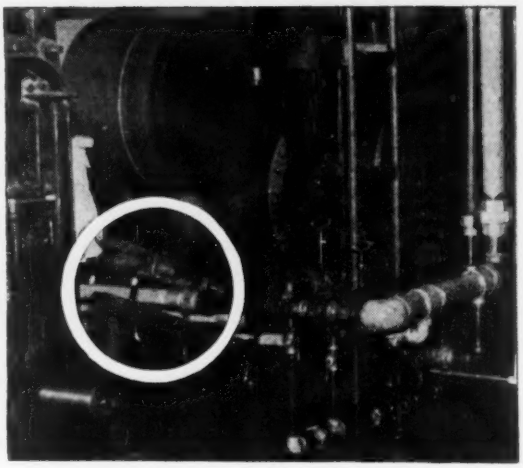
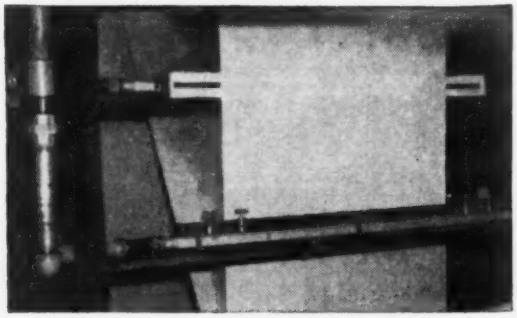
Photos Courtesy of RED-RAY Manufacturing Co., Inc., New York City, Manufacturers of Gas-Fired Radiant Ceramic Burners.

MORE AND MORE... THE TREND IS TO GAS FOR ALL INDUSTRIAL HEATING



Gas-Fired Radiant Ceramic Burners installed under cylinder of steam dryer to accelerate drying action.



Singeing of cotton cloth of various weights is readily possible with this simple arrangement of automatically controlled Gas-Fired Radiant Ceramic Burners.

THE BEGINNING OF KNITTING YARN

HAVING VITAMIN • Q • •

When cotton is picked and sent to us . . . from there on in it's OUR Story. Because it is Boger and Crawford that process this cotton into knitting yarn having that all-important feature . . . Vitamin Q, "Quality". The process of insuring this *extra* Quality in our knitting yarn is expensive to us, but from users' reports it is well worth our effort. Knitting yarn is poor without Quality. So, in selecting your yarn, look for Vitamin "Q"—"Quality." Every inch of Boger and Crawford yarn is steeped with Vitamin "Q".

The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it.
Signed . . . . .

Frederick Boger

BOGER and CRAWFORD

PHILADELPHIA, PA.

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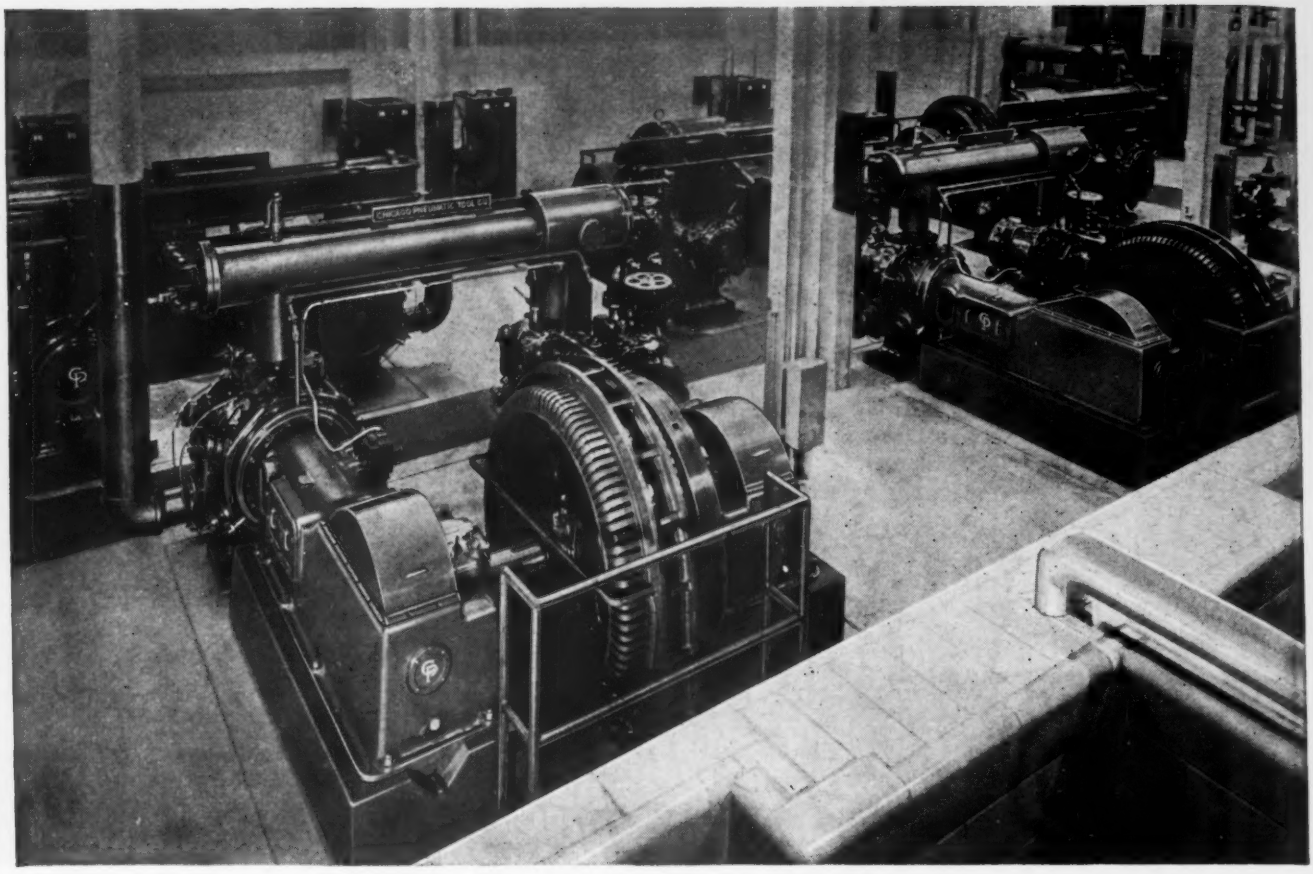


for continuous heavy-duty and economical operation

O-CE Compressors

Rugged construction, conservative rating, and low power consumption make the CP motor-driven Class O-CE the ideal compressor for the continuous, heavy-duty job.

- Quick-acting Simplate valves minimize power consumption, and provide high volumetric efficiency.
- Large, streamlined air passages make air flow resistance negligible.
- CP Multi-step Control handles partial load demands with maximum economy.
- CP Intercooler assures maximum heat transfer with low water consumption.
- CP Automatic Starting Unloader completely unloads compressor when starting and stopping.

The CP Class O-CE Compressor is of the horizontal, double-acting, water-cooled type, with direct-mounted synchronous motor drive. Furnished in sizes up to 1,500 h.p., for pressures up to 5,000 pounds. Write for full information.

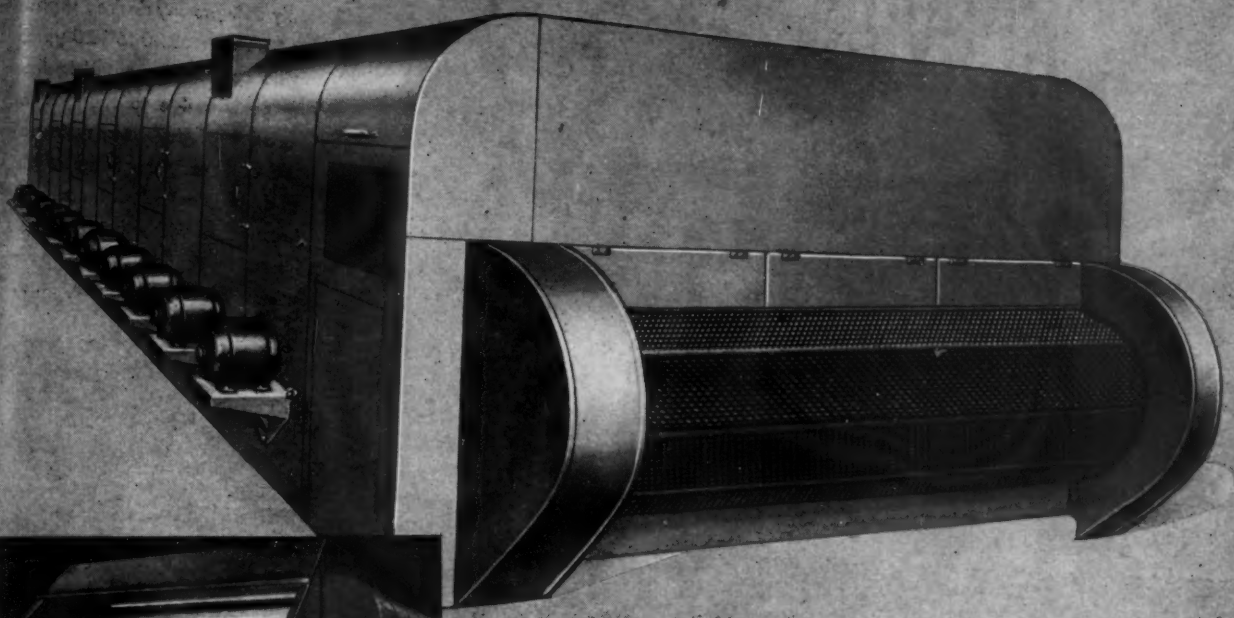
CHICAGO PNEUMATIC TOOL COMPANY

General Offices: 8 East 44th Street, New York 17, N. Y.

AIR COMPRESSORS • ELECTRIC TOOLS • PNEUMATIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

SARGENT'S STOCK DRYER

MODERN—AUTOMATIC



The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

for Drying Wool, Cotton, Rayon, Other Synthetic Fibres, Rags

The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

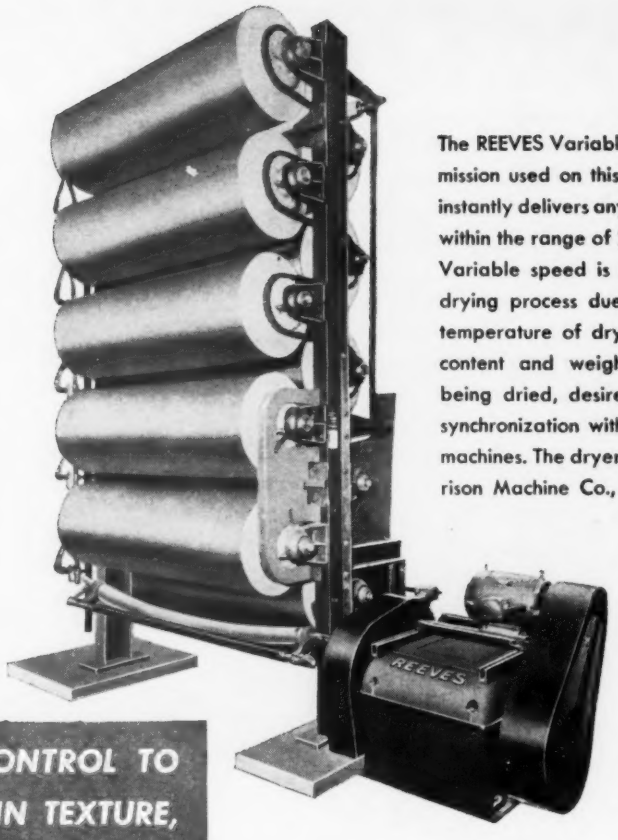
The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

Please write us for complete details.

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A.

Reeves Makes it Right!



The REEVES Variable Speed Transmission used on this 10 Can Dryer instantly delivers any desired speed within the range of 20 to 120 ypm. Variable speed is essential in the drying process due to changes in temperature of dry cans, moisture content and weight of the cloth being dried, desired dryness and synchronization with other finishing machines. The dryer is built by Morrison Machine Co., Paterson, N. J.

PROVIDES ACCURATE SPEED CONTROL TO COMPENSATE FOR VARIATIONS IN TEXTURE, TEMPERATURE, WEIGHT AND MOISTURE

Profit from the experience of other mill operators. Add extra *productive* time to the work week by equipping your machines with accurate REEVES Speed Control.

Applied to virtually any type machine used in the preparation, fabrication, spinning, twisting or finishing of yarn and cloth, REEVES Variable Speed Drives provide the infinite, stepless speed adjustability that assures sustained, high-speed production of finest, uniform quality.

No matter how fast or how frequently operating conditions may change—due to variations in texture, weight, temperature, moisture content or operator skill—the *exact* speed needed to perform each operation most efficiently can be obtained *instantly* with REEVES Speed Control—without time-consuming stops or slow-downs.

The complete REEVES line consists of three basic units, all manufactured in a wide range of designs, sizes, capacities and speed ratios—with manual, hydraulic, mechanical or completely automatic control. A REEVES engineer who knows the textile industry and its problems from the ground up will be glad to consult with you on your particular speed control requirements. Let us have him call on you, and also send you a copy of the comprehensive, 114-page catalog W-450A.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Accurate Variable

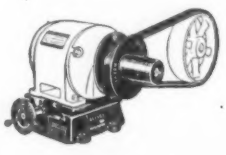
REEVES Speed Control

Gives the Right Speed for Every Job!

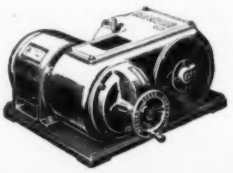
THE THREE BASIC REEVES SPEED CONTROL UNITS

VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range —2:1 to 16:1. Sizes—fractional to 87 hp.

VARI-SPEED MOTOR PULLEY provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 15 hp.



MOTODRIVE combines motor, speed varying mechanism and reduction gears in single compact unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 15 hp.



Pails that sail through
CONTAMINATION PROBLEMS
SAFETY FOR SENSITIVE PRODUCTS: Rustproof and corrosion-resistant, these long-lasting Inconel pails assure top protection against metallic contamination. Made and stocked in 12-14-16-20 quart sizes.

Ordinary pails? Not by a long shot!

They're in a class by themselves.

They stay bright and clean. They stay smooth and sturdy. They put an end to metallic contamination of dyes, sizing and bleaches. And they'll be on the job long after ordinary pails have hit the scrap heap.

Why?

Because they're made of solid Inconel*. This Nickel Chromium Alloy is especially suitable for acid dyeing as well as for the application of diazotized and developed colors and sulfur colors. It resists corrosion by dilute hypochlorites, sizing or other compounds and solutions used to impregnate fabrics.

Easy to clean and keep clean, Inconel—like all high Nickel Alloys—can never rust. It's the same all the way through. There's no coating to chip or crack, nothing to wear away. And it has the strength and toughness to take plenty of slamming around.

*Reg. U. S. Pat. Off.

Durable, all-welded Inconel pails are made by the ALLCRAFT MANUFACTURING COMPANY, INC. Because of their long life, ALLCRAFT Inconel pails are the most economical you can buy; the protection they afford against metallic contamination makes them the safest you can use.

INCO TRADE MARK **INCONEL**

...80 NICKEL — 14 CHROMIUM

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

FOR FURTHER INFORMATION—MAIL COUPON

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

Please tell me where I can obtain ALLCRAFT *Inconel pails.*

Name.....

Company.....*Title*.....

Address.....

City.....*Zone*.....*State*.....

T.W. 1-48

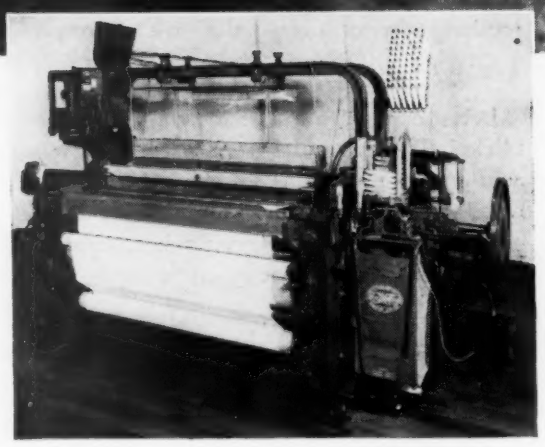
The marks of experience are not just for decoration.

C&K's experience covers 100 years of close contact with thousands of mills weaving all kinds of fabrics from ribbon ¼" wide to industrial felt 540" wide.

C&K's wide knowledge of the textile industry — plus an unmatched accumulation of records and facts for research and production — places at your disposal:

1. Machinery and parts for practically every woven fabric.
2. Advice and assistance concerning the manufacture of any type of woven textile product.
3. Information and help on the problems of successful mill operation.

So in your own economic battles, make C&K a member of your General Staff.

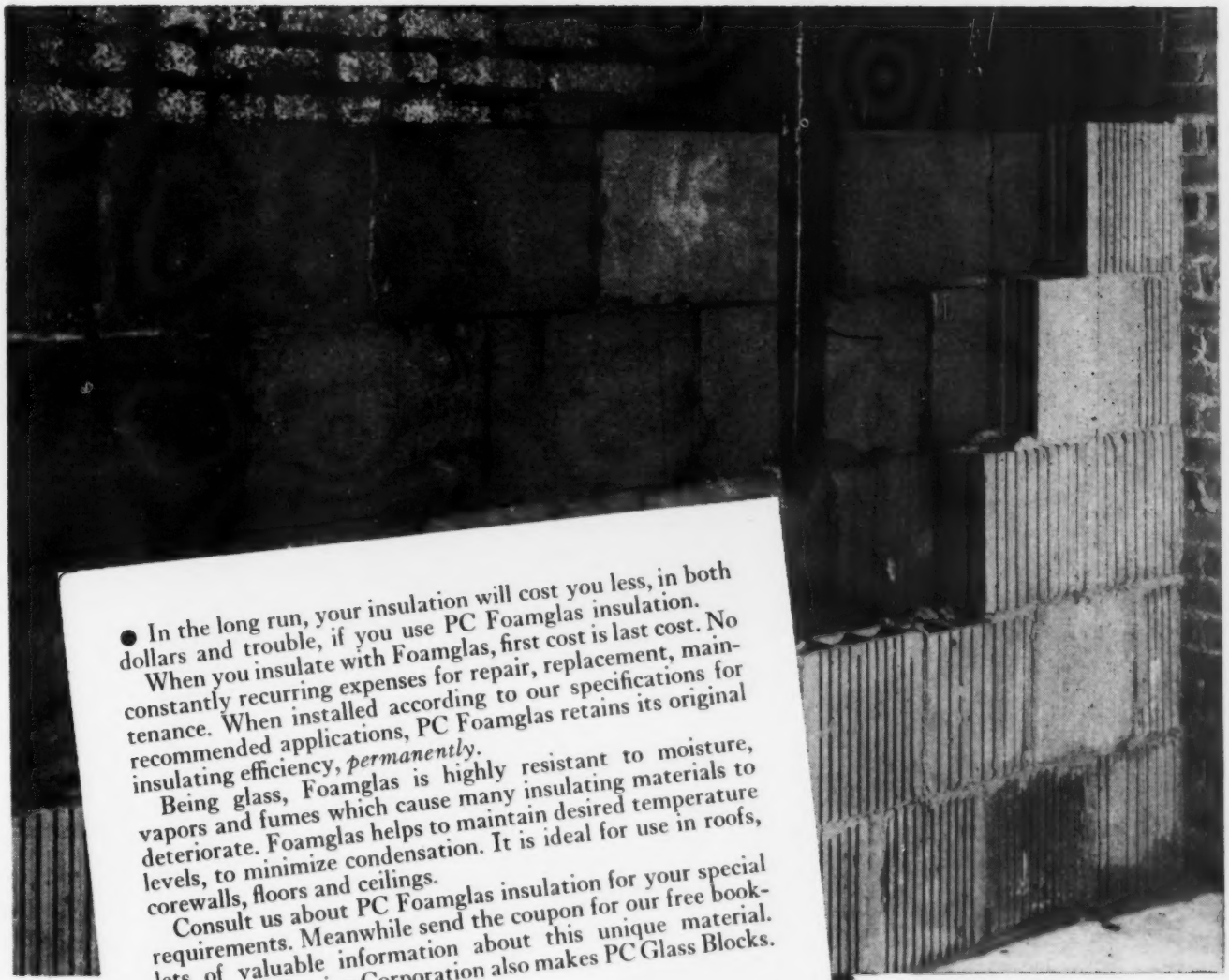


Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. • CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

What's the long-term story on insulation costs?



● In the long run, your insulation will cost you less, in both dollars and trouble, if you use PC Foamglas insulation.

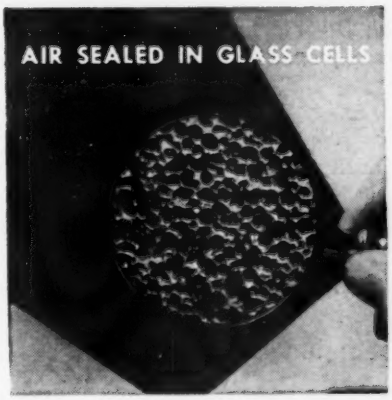
When you insulate with Foamglas, first cost is last cost. No constantly recurring expenses for repair, replacement, maintenance. When installed according to our specifications for recommended applications, PC Foamglas retains its original insulating efficiency, *permanently*.

Being glass, Foamglas is highly resistant to moisture, vapors and fumes which cause many insulating materials to deteriorate. Foamglas helps to maintain desired temperature levels, to minimize condensation. It is ideal for use in roofs, corewalls, floors and ceilings.

Consult us about PC Foamglas insulation for your special requirements. Meanwhile send the coupon for our free booklets of valuable information about this unique material. Pittsburgh Corning Corporation also makes PC Glass Blocks.

When you insulate with FOAMGLAS you insulate FOR GOOD.

WHEN OUTSIDE WALLS are insulated with PC Foamglas, the material can be easily cut to fit around pipes, conduits and other obstructions. In core walls of all sorts of buildings, PC Foamglas minimizes condensation, reduces heat loss, eases the load on heating and air-conditioning equipment.



THE MAGNIFIED CROSS SECTION of PC Foamglas shows its cellular construction. It is literally a foam of glass, solidified into big, strong, rigid blocks. In the millions of minute cells of glass-enclosed air, lies the secret of its insulating value.

Pittsburgh Corning Corporation
Room 400-8, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send me without obligation, your free booklets on the use of PC Foamglas insulation for:

Roofs_____ Walls_____ Floors_____

Name_____

Address_____

City_____ State_____

PITTSBURGH ® PC CORNING

FOAMGLAS INSULATION

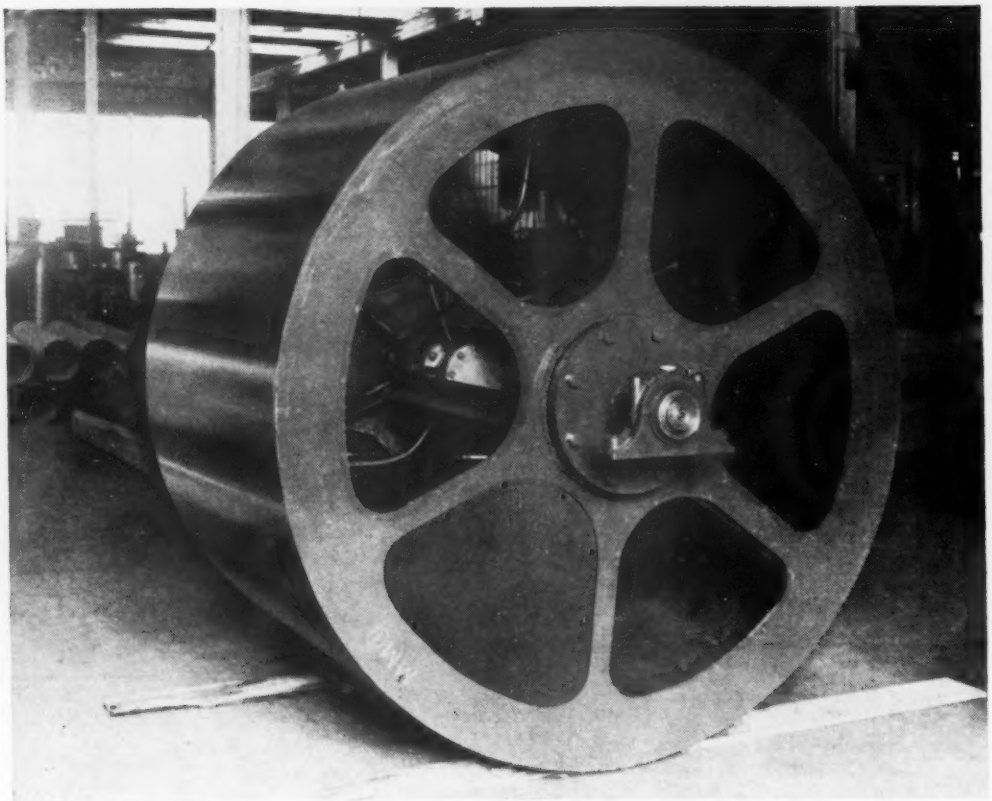
FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

UNISTEL

When you buy—

STAINLESS STEEL CYLINDER DRYERS

of any type, you are investing in high priced equipment from which you expect a definite return for many years. In order to realize your expectations, buy stainless steel quality.



A seven foot diameter Stainless Steel jacketed Back Dryer cylinder with end covers removed to show internal steam and syphon piping.

UNISTEL Dryers are individually engineered, taking advantage of the most modern technical progress. UNISTEL Dryers are constructed in a shop that was built for and has always specialized in stainless steel fabrication.

Engineers—Designers—and Builders of Back Dryers, Can Dryers, Slashers, Kettles, etc.

A New machine for continuous dyeing, slashing, beaming of cotton yarns

UNITED STEEL of AMERICA, INC.

30 ROCKEFELLER PLAZA
NEW YORK 20, N. Y.

Canadian Representatives: United Steel Corporation Ltd. of Canada, Toronto

STANDARD CHEMICALS FOR THE TEXTILE INDUSTRY

Boil-Off Assistants	Pyrotex #121	Sulfonated Condensation product
Degumming Agents	Detersol	Soap and buffer salts
Detergents	Turpenol	Soap and solvents
Coning Oil	Nylon Oil #125 and #127	Nylon coning oil
	Stantex Coning Oil	Rayon coning oil
Delustrants	Duller W	Colloidalized pigment, light shades
	Dulstan	Colloidalized pigment, dark shades
Dye Fixing	Solidina	Alkyl aromatic addition compound
Dyeing Assistants and Penetrators	Pyrotex	Sulfonated condensation product
	Dyeing Oil	Sulfonated oils and solvents
Dye Retarding Agents	Retardine	Special mix for vat colors
Emulsifying Agents	Emulsifier Base	Specially treated sulfonated oils and fats
Finishing and Weighting Compounds	Voile Finish	Full, firm body finish
	Finish #415	Silk and rayon satins
	Weighter Finish	Gums and weighters for silk and rayons
	Guminol	Wool and cotton weighter finish
Scrooping Agents	Scroop Oil	Special sulfonated and saponified oils
Size	Rayon Size	Blend of wax and gums
Staple Fiber Oils	Stantex #3005	Finishing oil for raw stock dyeing of staple fiber
	Stantex #3006	
Softeners	Standapol Oils	High sulfonated vegetable oils
	Stanteosine	Cation active softener
	Tallofin	Sulfonated tallow
	Rubinol	Sulfonated cocoanut oil
	Wax Cream	Blend of softening waxes
Splashproofing and Waterproofing Agents	Stantex Splashproof	Colloidal waxes and metal salt dispersion
	Stantex Waterproofing	Colloidal waxes and metal salt dispersion

S C.P.Inc
REG. U.S. PAT. OFF.

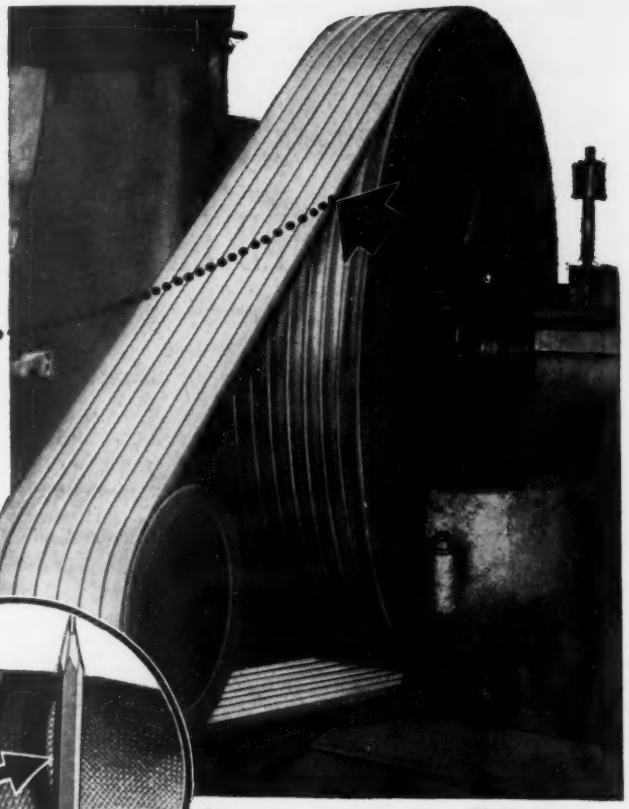
STANDARD CHEMICAL PRODUCTS, Inc.

1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

HIGH POINT, N. C. · LEAKSVILLE, N. C. · PATERSON, N. J.
CHATTANOOGA, TENN. · PROVIDENCE, R. I. · SACRAMENTO, CAL.

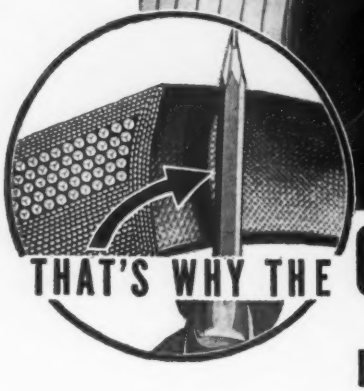
THE Sides OF A V-BELT ARE WHAT Grip the Pulley, Pick-up the Load AND REALLY Get the Wear!

Diagram of V-Belt in Sheave-Groove



Every ounce of load a V-Belt carries must *first* be picked up by the *sides* of the belt. Clearly so, because *only* the *sides* come into contact with the pulley! The sides do all the *GRIPPING* on the pulley. They get all the wear against the sheave-groove wall. The sides *pick up* the load. They transmit that load to the belt as a whole. And then, once more, the sides—and the sides *alone*—grip the driven pulley and *deliver* the power to it.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.



THAT'S WHY THE Concave Side (A GATES PATENT) IS IMPORTANT TO YOU!

Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt—and that's why the patented Concave Side is important to you.

The simple diagrams on the left below show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

and the CONCAVE SIDE is more important NOW than ever before!

Now that Gates SPECIALIZED Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% *higher horsepower ratings*—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important *now* than ever before!

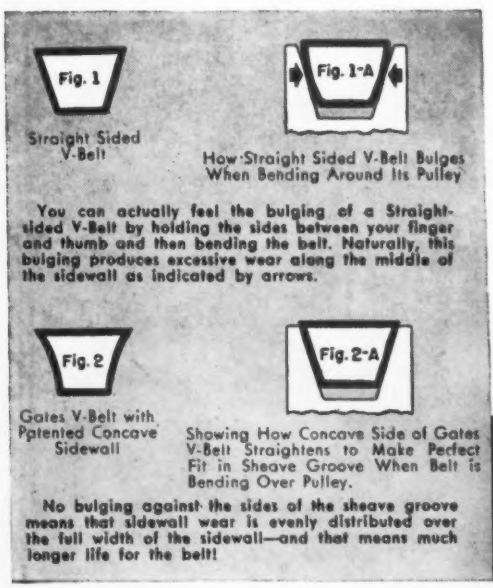


Fig. 1
Straight Sided V-Belt
Fig. 1-A
How Straight Sided V-Belt Bulges When Bending Around Its Pulley
You can actually feel the bulging of a Straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.
Fig. 2
Gates V-Belt with Patented Concave Sidewall
Fig. 2-A
Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt is Bending Over Pulley.
No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

Gates

The Mark of SPECIALIZED Research

THE GATES RUBBER COMPANY

"The World's Largest Makers of V-Belts"

DENVER, U. S. A.

481

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

Photograph Courtesy of Cheney Brothers.

EXERCISE IN *Duplication*

WE did it with mirrors, of course, in the case of the young lady above. However, she illustrates the perfect duplication of delicate shades and lovely colors that is both the regular business and the constant concern of textile dyers and finishers—and *they* do it with stainless steel.

Before Allegheny Ludlum years ago pioneered the commercial development of stainless steel in this country, dyers had no sure way of reproducing exactly the same color in two successive dye baths. But now stainless steel equipment cleans so quickly, easily and thoroughly that fabrics can be turned out in hundreds more beautiful shades than before, with complete color consistency and at minimum cost.

Remember, Allegheny Metal protects against contamination, resists corrosive attack, and *lasts*—year after year after year. It's available *now*—ready to your order in all forms—let us help you use it to best advantage. ● *Call for an Allegheny Ludlum Engineer.*

ALLEGHENY LUDLUM

STEEL CORPORATION, Pittsburgh, Pa.

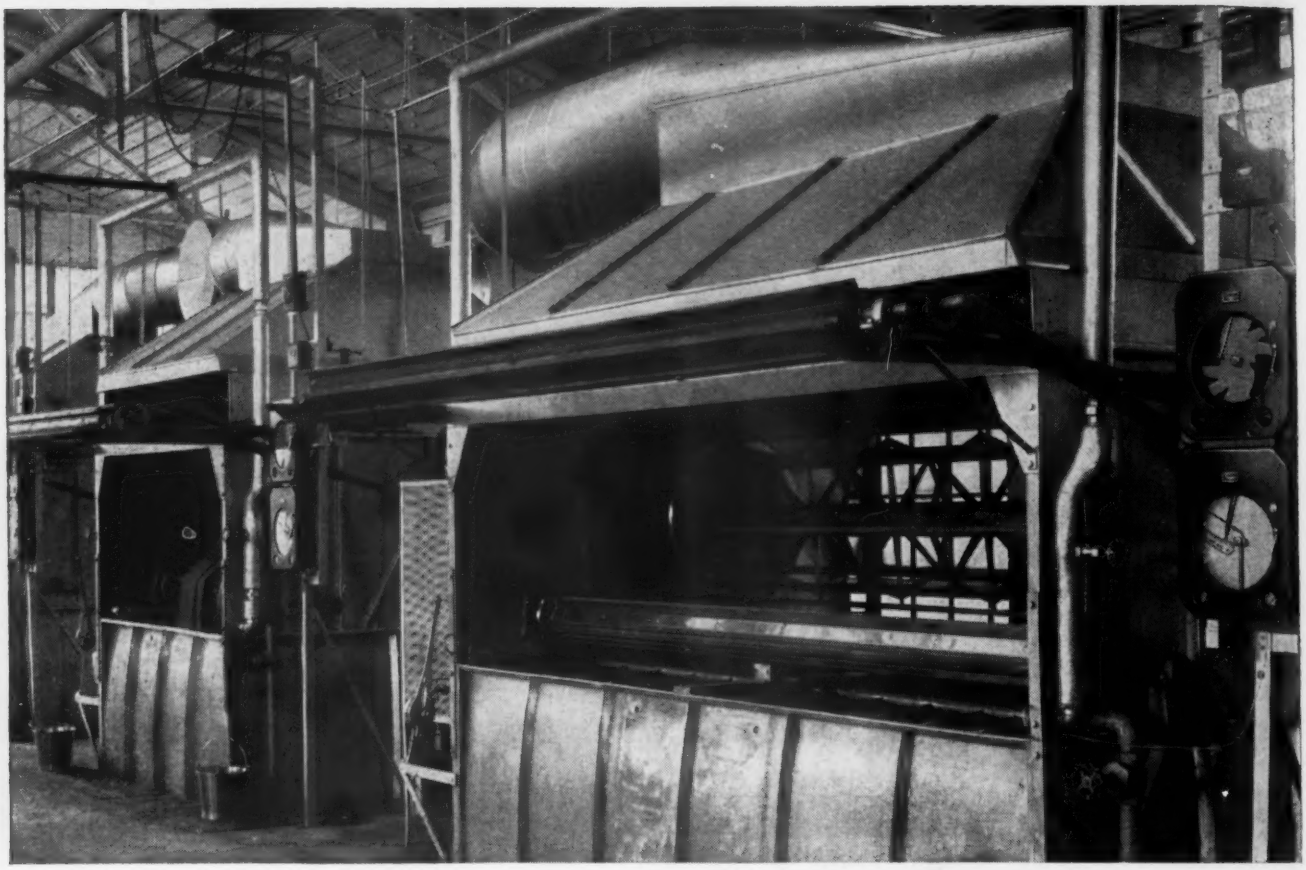
AL

SYMBOL OF VALUE

Pioneer in Specialloy Steels

W&D 605-B

ALLEGHENY METAL is stocked by all JOS. T. RYERSON & SON, INC. Warehouses



NO ERRORS

ALMOST all chance of human error has been eliminated by the Taylor Fulscope Time Schedule Controllers on this battery of Rodney-Hunt wool piece dye machines. They're delivering top quality every single time—for Marshall Field's Fieldcrest Division, Spray, N. C.—and doing it automatically! No error can be made in setting the rate of rise after the cam is cut. No chance of holding at the wrong temperature for the wrong length of time. All the operator has to do is press a start button!

Here's what happens at the press of the button. The Fulscope Time Schedule Controllers let steam into the dye kettles and control the rate of rise to the predetermined temperature. Then they maintain that temperature precisely during the hold period until the end-of-cycle signal flashes. For an add period, the operator just presses the button again. When the shade is matched, he presses the return-to-start button, shutting off the steam and returning the cam to start position. He can change the timing with the same cam merely by speeding up or slowing down the cam movement.

Taylor Time Schedule Controllers not only cut operating costs by saving you money on steam and dyestuffs but also assure uniform dyeing conditions. This is only one of many ways you can keep quality up and costs down with Taylor Accuracy. Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

Aunt Maggie stayed indignant for 15 years

Thirty years ago we built a little frame church in our town. Everybody helped and when we were through there was $500 left in the New Church Fund. After some thought we decided to keep the fund intact and build it up each year.

Aunt Maggie was indignant when she heard about it. "Did you ever hear the beat?" she scoffed. "That money should be put to some use."

From that day on for 15 years, Aunt Maggie tried to think of ways to spend the New Church Fund—an electric stove for the Ladies' Aid, a special contribution to foreign missions, a trip to Chicago for the children's choir.

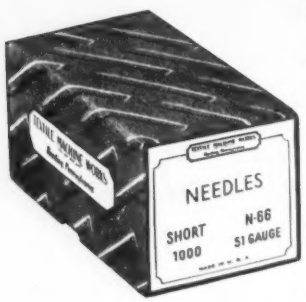
Today we have a new debt-free church and a *new* New Church Fund. You see, Aunt Maggie never convinced us.

Take a look at your last Financial Statement: Are you carrying the money that you charge off for Depreciation as a "*current*" or as a "*fixed*" (plant) asset? . . . Is it money in the bank or is it money that you owe to yourself?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS

READING, PENNA.

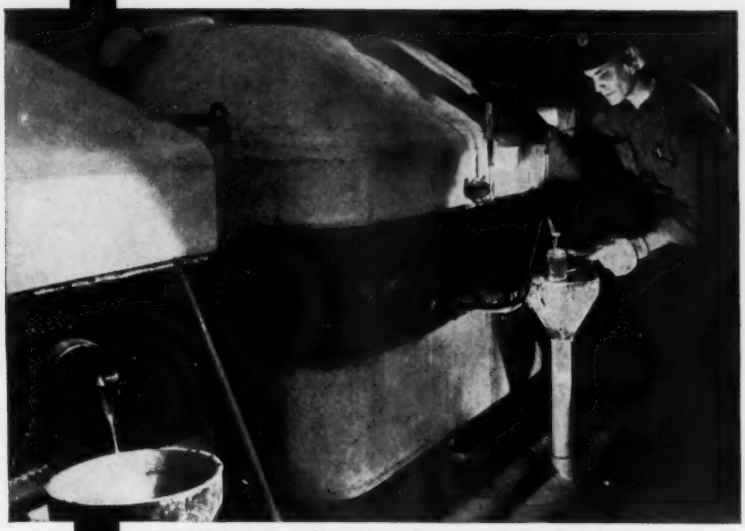


Charm Collection... Lovely ladies choose the clear, sheer beauty of full-fashioned stockings to include with their treasured possessions. It's the same with full-fashioned stocking manufacturers. They choose TMW Needles because they're "Fixture Drawn"*. This special TMW patented process holds the needles straight and true; assures finer qualities in full-fashioned knitting. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

*Reg. U. S. Pat. Off.

TEXTILE MACHINE WORKS • READING, PA.

Three Hooker Chemicals That Help Make Thousands



Samples of Caustic Soda, as it comes from the Hooker "S" Cell, are checked carefully in the laboratory for strength and purity.

✓ **LIQUID CHLORINE**
✓ **CAUSTIC SODA**
✓ **MURIATIC ACID**

Hooker chemicals numbering over a hundred, and thousands of other products get their start from Caustic Soda, Liquid Chlorine and Muriatic Acid made by Hooker. Your supplies of these basic heavy chemicals are made possible to a large extent by the Hooker Type "S" electrolytic cell, designed and developed by our own engineers.

Caustic Soda, Liquid Chlorine and Muriatic Acid are produced and shipped from our plants at Niagara Falls, New York, and Tacoma, Washington. Helpful technical service and prompt shipping are corollary to the uniform high quality of these Hooker products.

Data sheets and other literature describing Hooker Chemicals are available upon request. If you don't have our latest General Products List, Bulletin 100, why not write today for your copy?

HOOKER ELECTROCHEMICAL COMPANY

4 Forty-Seventh St., Niagara Falls, N. Y.
New York, N. Y. Wilmington, Calif. Tacoma, Wash.

HOOKER CHEMICALS

Aluminum Chloride Paradichlorbenzene Monochlorbenzene Sodium Benzoate Sulfur Chlorides Sodium Sulfide Sodium Sulfhydrate

A·P·T·

Tapered WARP SPINNING BOBBIN

STEEL REINFORCED

PLASTIC REINFORCED

3 REASONS WHY IT IS NOW STANDARD EQUIPMENT

The A. P. T. Tapered Warp Spinning Bobbin was developed at the request of, and in cooperation with, a leading manufacturer of high speed, large package cotton warp spinning frames, when this type of equipment was being developed. It is not strange therefore that the A. P. T. Tapered Bobbin has become standard equipment in this particular field.

Three major reasons account for its popularity, as follows: —

1. More and better spinning production due to the tapered construction of the bobbin. The larger diameter at the bottom puts less strain on the yarn at the start of the spin, and the tapered construction equalizes the tension over the full length of the traverse and permits larger packages of better production with fewer ends down.
2. More and better production in spooling and rewinding operations. The yarn comes off better from a tapered bobbin.
3. Finger tip seating. Spindle tip suspension and tough but resilient construction of bobbins permit positive seating with finger tip pressure. Thus the bobbins come off easily.

OTHER ADVANTAGES

Like other A. P. T. Yarn Carriers, this tube is made of laminated paper impregnated for moisture resistance and hardened by baking. It is highly resistant to distortion, chipping and splitting, will not splinter and is free from static. Deep, well rounded corrugations permit free but controlled delivery. Give these superior carriers a chance to improve the quality of your production and to reduce costs. They are adaptable to the spinning, twisting or weaving of all types of fibres.

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898

WOONSOCKET, R. I. GREENVILLE, S. C.

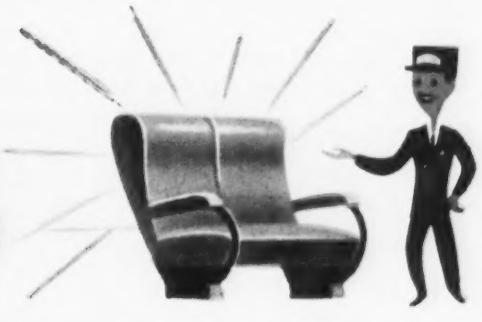
CANADIAN REPRESENTATIVE: HUGH WILLIAMS AND COMPANY, TORONTO, CANADA

MAKE THE FABRICS THAT OPEN NEW MARKETS

WITH BEAUTIFUL, MAGICALLY PRACTICAL

Firestone Velon*

Velon fibre gives you magic selling-power . . . because for the first time "impractical" colors become practical, woven designs more beautiful . . . because *Velon* is non-absorbent, can be cleaned so quickly and completely . . . because the wonderful fabrics you can make defy dirt, staining, shrinkage, fading, wear and age. *Velon* will expand your production. Write Firestone, Akron, for full information on *Velon*, and for complete technical assistance.



BEST TODAY STILL BETTER TOMORROW

*TRADE MARK

For Better Continuous Extrusion Takeup...

ONE COMPACT MACHINE DOES THE *Whole Job!*

That's all it takes—just *one* compact machine to perform all the functions involved in continuous extrusion takeup operations. There is no need for separate capstans, lineshafts, tension stands or other propelling and winding equipment.

This new type constant tension continuous takeup with integral capstan and drive was developed as the result of many years of experience by IOI engineers in the design of winding equipment.

The machine features an adjustable constant tension reel drive and an ingenious and efficient system of loading and unloading reels without interrupting the winding process. A cantilevered demountable alloy shaft assembly makes reel loading and unloading a simple and easy operation that eliminates the possibility of damaging the reel flanges.

Precision traverse mechanisms of various types developed by IOI to level lay wire provide either automatic or manual crossover from full to empty reel. Standard traverse for high speed extrusion operations, as illustrated above, has single large diameter reversing screw with wide lay range and stroke adjustment.

For smooth propulsion of wire tubing or monofilament, IOI takeups employ large, easily threaded, positive grip driving capstans with fleeter sheaves. Capstans are lightweight, precision-machined, and balanced dynamically for top operating speeds. Capstan and reel drives are hydraulically synchronized so that one speed adjustment controls both.

For complete detailed information on this new takeup machine—as well as other recent IOI developments in continuous extrusion equipment—write for "Blueprint for Industry" Part IV, fully illustrated with photographs and engineering drawings. It's free for the asking.

INDUSTRIAL IOI OVENS, INC.

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON W.1, ENGLAND

Wheels of Progress

From the wheels of antiquity to the wheels of modern industry Bearing Bronze continues to have its part. In the bus and motor coach of today (and in the automobile of tomorrow) the Torque Converter is the ultimate means for transmitting power where variable torque is needed.

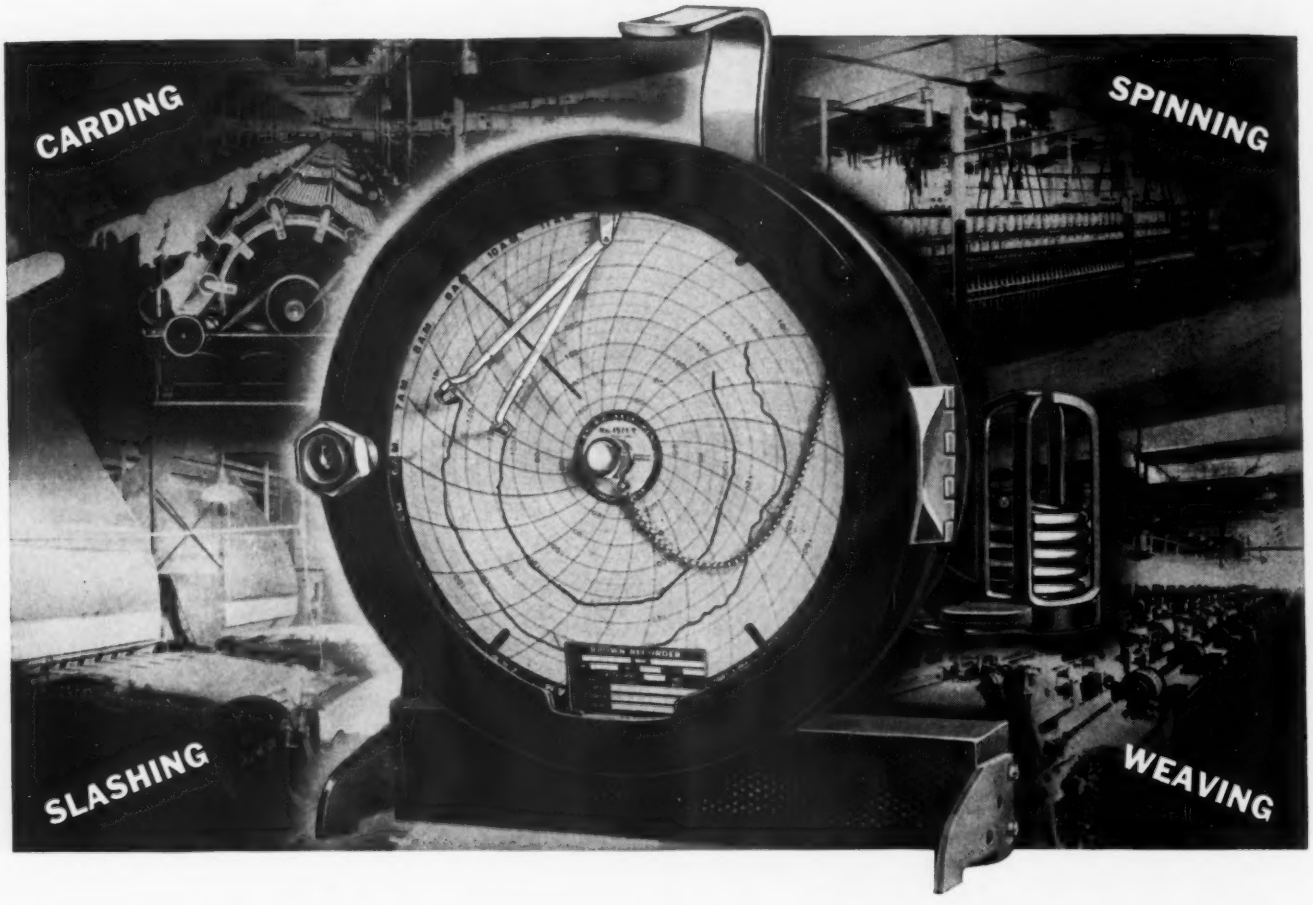
Bunting Bearing Bronze blade rings are a functional part of these converters—have been for more than ten years. So, whether they are the antique chariot wheels of a Pharaoh or the modern wheels of industry and progress, Bronze—Bearing Bronze—has played and continues to play its important part. Today it is Bunting Bearing Bronze. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in principal cities.

BRONZE BEARINGS
•
BUSHINGS
•
PRECISION BRONZE BARS

Bunting

80

Every Textile Mill—



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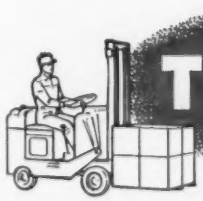

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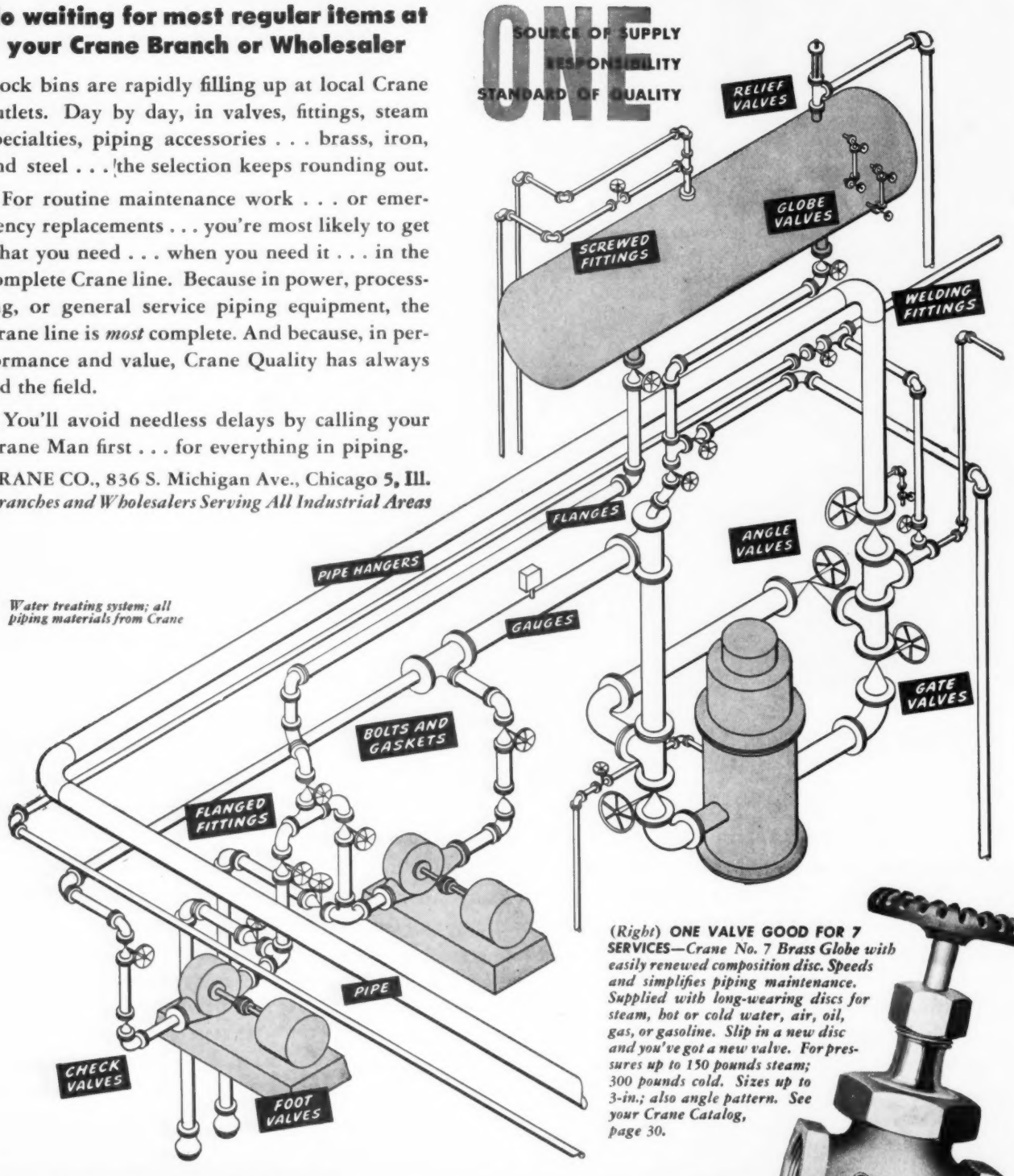

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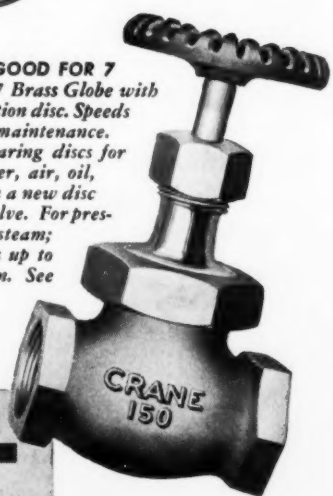

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"In 1937, we fitted therefore our flyer frames with 'CONDOR' cone belts, and now the wonder: 90% of those 'CONDOR' belts are running till now. After 10 years of running (mostly 3 shifts) they are in good condition."

Actual photograph of belt after 10 years (note brand)

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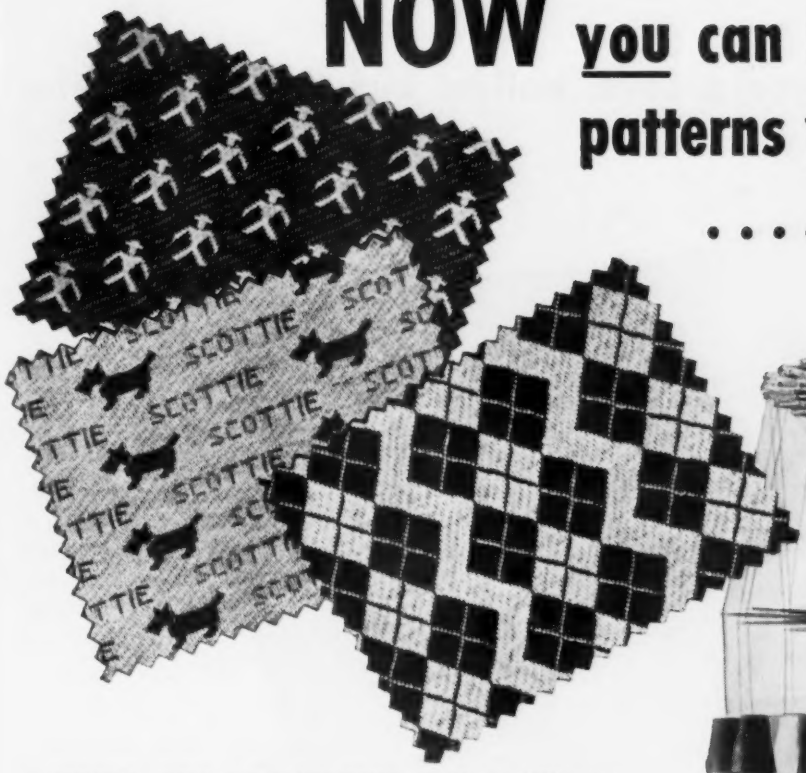

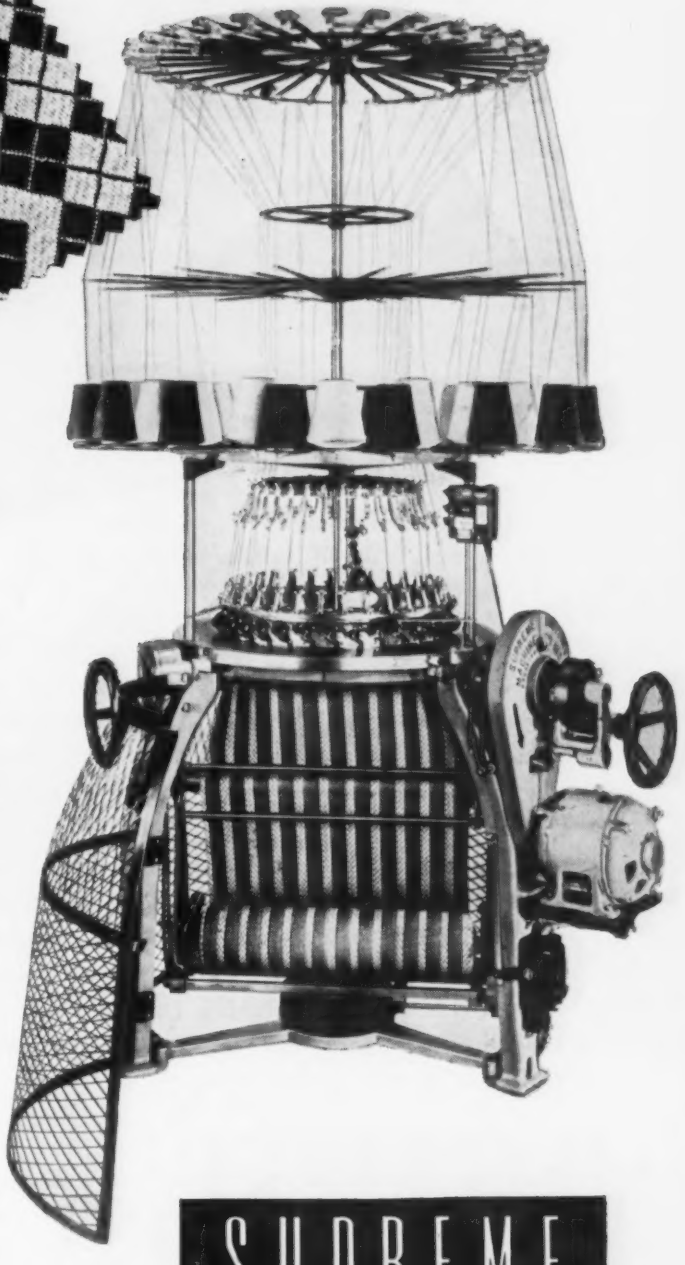

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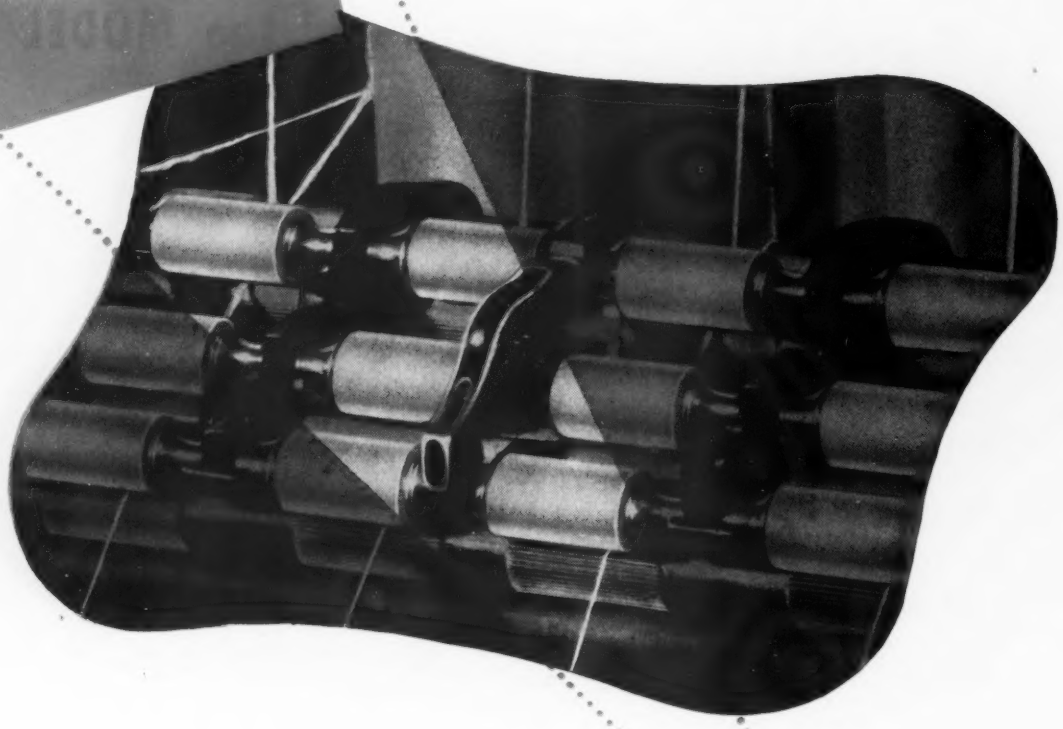
Daycos never groove, hollow out, flatten or distort



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Waynesville, N. C. plant, devoted to manufacturing textile machine accessories to help you produce finer textiles more economically.

"The fate of the world sits on this rug"

– JOHN L. LEWIS

NOTE: Paste this editorial in your hat. Re-read it as you start to shiver the next time John L. Lewis cuts off the nation's coal supply.

"Labor monopoly" will mean much more to you then. But if you are worried enough you will get after your Congressman to do his part now — before the shivering starts.

★ ★ ★

"The fate of the world sits on this rug."

The men on the rug: John L. Lewis, President of the United Mine Workers, who made the remark; Benjamin Fairless, President, United States Steel Corporation; George M. Humphrey, Chairman, Pittsburgh Consolidation Coal Company; Harry M. Moses, President, H. C. Frick Coke Company; Charles O'Neill, President, United Eastern Coal Sales Corporation; the late John O'Leary, International Vice President of the United Mine Workers; and John Owens, President, District No. 6 United Mine Workers.

The place: Room 800, Carlton Hotel, Washington, D. C.

The time: Last July during the "negotiation" of a new soft coal contract.

The outcome: Another whopping increase in wages and the price of coal, another hike in the cost of living, and a "contract" which binds the United Mine Workers only as long as they are "willing and able to work."

Mr. Lewis was right. The fate of the world did sit on the rug. In fact, it sat at Mr. Lewis' feet, for, as this editorial will explain and as the outcome shows, his power over coal is absolute.

Without coal modern industrial civilization collapses. Without Mr. Lewis' assent coal can not be mined. He has the nation and, in the years 1947-48, the world at his mercy.

The Taft-Hartley Act, good as it is, does nothing to check this kind of monopoly.

I

The Taft-Hartley Act fails to protect the public in many major particulars.

Here are some of them.

1. Labor monopoly is promoted and protected by its continued exemption from the federal antitrust laws. Management has no such exemption and should not have.

2. Industry-wide bargaining, a kind of second-degree monopoly, is left virtually undisturbed. So is union-wide bargaining which extends the power of national unions far beyond a single industry.

3. Featherbedding, the art of getting paid for doing nothing, is left largely intact.

4. The menace of having local utility strikes wreck the health and safety of a community is left untouched. Postponement and persuasion are the only instruments provided to deal with strikes that would wreck the nation.

My purpose in citing these omissions from the Taft-Hartley Act is not to belittle the act or its framers. They did a most courageous and constructive job. They made a real start toward restoring a workable balance in industrial relations in the United States, so far as the law can do it. But they have not completed the job. Among their omissions the two discussed in the next sections of this editorial stand out above all others.

II

The most serious Taft-Hartley shortcoming is its failure to deal with labor monopoly.

Labor monopoly exists wherever a union is so strong that bargaining becomes a sham and the union virtually dictates its own terms.

If an employer or group of employers secures a monopoly or anything approaching a monopoly, prosecution for violation of the federal antitrust laws

is in order. That is as it should be, for monopoly means death to economic and political freedom.

But if a labor union secures complete monopoly control over an industry through control of its workers, that union remains above and beyond the antitrust laws. "The fate of the world sits on this rug." By that imperial attitude John L. Lewis fully demonstrated how obsolete is the notion that labor unions are weak and, therefore, need exemption from the antitrust laws. Through the United Mine Workers, Mr. Lewis controls about 90% of the coal miners. (No company controls more than 5% of the nation's coal output.) Wherever he sits he has at his feet the welfare of the whole nation.

Great international unions exercise a comparable measure of monopoly control in other basic industries — steel, transportation, and automobiles, for example.

These labor monopolies can destroy the nation if they are not themselves broken up. Witness the plight of France. There the Communists have found in the great labor monopolies an instrument for shaking the nation to its foundations.

III

The Taft-Hartley Act also leaves untouched industry-wide collective bargaining, which is a kind of second-degree monopoly.

When all or almost all of the employers in an industry get together with the union leaders to agree on wages and working conditions (that is called industry-wide bargaining) they set up a monopoly control. It is a less concentrated monopoly than when the terms are dictated by either side, as Lewis dictates them in coal. But, nonetheless, competition is eliminated and monopoly control is established over wages, which are by far the largest element in the cost of production. It follows that public regulation of collective bargaining — *which means the end of free unions and free management* — is not far behind.

Some employers defend industry-wide bargaining as their only defense against industry-wide unions. Other employers like it because it makes wages and hours uniform for their whole industry.

For those employers who are forced into industry-wide bargaining in self-defense the road to relief is clear. Congress owes it to them and to the public to free them from the necessity of dealing with a monopolistic union. The best way to do that is to remove the exemption of labor unions from the federal antitrust laws.

To those employers who engage in industry-wide bargaining because they like it the proper answer is also quite clear. They (and the union involved) are maintaining a private monopoly which is offensive to the public interest. It should be prevented by law.

IV

Congress should finish the job of eliminating labor monopoly and industry-wide bargaining.

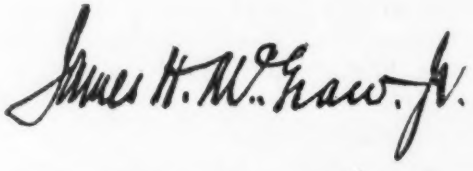
In the course of enacting the Taft-Hartley law last spring the House acted to eliminate the exemption of unions from the federal antitrust laws and to make industry-wide bargaining illegal. The Senate, however, refused to go along.

The principal reason advanced in the Senate for deferring action was that more knowledge is required to legislate intelligently. To get the needed information, a joint Congressional committee was created.

It is standard Congressional practice to stall off tackling a difficult job by creating a special committee to study it. The new joint committee is not likely to prove an exception to this rule — *unless the voters loudly demand of Congress that it get on with its job of protecting the public interest in the conduct of labor relations — a job which is nowhere near done.*

Helpful and effective as many of its provisions are, the Taft-Hartley Act does not face squarely the central principle of industrial relations in a free society. That principle is this: *Neither employers nor organized workers, separately or in combination, shall exploit the public by establishing a monopoly.*

Do not let your Congressmen go to sleep on the job of solving that problem or hide from it because of fear. The perfect solution may be hard to find. But the problem can be largely solved by making organized labor subject to the federal antitrust laws just as management is now subject to them. If that problem goes by default your children and your grandchildren will really know what slave labor means.



President, McGraw-Hill Publishing Company, Inc.

YOU MAY HAVE WONDERED when, where, and how Japanese textile competition would return to the world markets. This article, straight from our seasoned Far-Eastern correspondent, tells the story not only as SCAP sees it, but also through comments by Japanese textile men.

In some divisions of its textile industry, Japan's technology appears good and is well adapted to local conditions. In other divisions, it is medium to poor.

It seems that years must elapse to reconstruct the Japanese textile industry to its 1936-8 levels. New conditions at home and abroad may make that reconstruction somewhat different from what you might have expected.

This story gives you the picture in two parts. Beginning on this page is an economic and statistical survey. On page 104 begins a report on some Japanese technology and equipment.—Editor

JAPANESE TEXTILES

Will Be Slow in Revival

HIGHLIGHTS: *Operable textile machinery in Japan is one quarter to one third of prewar set-up—Production further limited by coal shortage and scant raw materials—Half of product, to 1950 at least, must be exported to pay for food, cotton, and wool—$2 silk foreseen—Until 1950, per capita home supply is only 2 lb. of textiles —Tables tell story of Japanese rise and fall—New labor laws make old starvation-wage levels unlikely in future.*

By A. W. JESSUP, *Tokyo Bureau, McGraw-Hill World News*

REVIVAL OF JAPAN'S textile industry to a level approaching the output of its mighty mid-thirties will take at least 10 yr. The industry has been scourged by war. It lacks capital. There is little coal production. Pig iron and steel are short. Raw cotton and wool must be imported—and paid for.

The potentially powerful status of labor, liberated by the peace from its subservient position of the past, makes a managerial revolution inevitable.

Little more is left of what was once the world's third largest textile producer than ingenuity and ambition. Even those attributes have suffered. Few Japanese textile men can yet look beyond the minimum rehabilitation of present plants.

THE WAR'S TOLL. Both American bombers and the Japanese military took a heavy toll. Devastating blows came from stripping of machinery to provide scrap for the manufacture of Japanese munitions.

These are the over-all results:

Of 12,000,000 cotton spindles owned in 1937, only 3,800,000 remain and only 2,600,000 are now operable. Looms dropped from 362,000 prewar to 136,000.

The wool branch of Japan's industry, once the world's second largest, owned 1,000,000 worsted spindles and 732 woolen cards, prewar. War losses cut this total to a repairable 828,000 spindles, but cards increased during the war to 907 due to pressure to manufacture heavy clothing for the army.

In 1938, Japan was the world's largest producer of rayon filament and staple, with an annual capacity of 640,000,000 lb. of filament and 980,000,000 lb. of staple. This was knocked down to 120,000,000 lb. and 240,000,000 lb. capacity, respectively. Only one-third of the filament and one-half of the staple capacity is operable.

Present goals for Japan's industry have been set by the Textile Div. of the Economic & Scientific Section (ESS) of GHQ, Supreme Commander for the Allied Powers (SCAP): 4,000,000 cotton spindles; 733,000 worsted spindles; 815 woolen cards;

165,000,000 lb. annual production of rayon filament; and 135,000,000 lb. annual capacity of rayon staple.

Industry estimates the cost of this rehabilitation at 5,000,000,000 yen at present rates for materials and labor. Prices are rising, so this figure is good only for today. Next year the ante may be double. Where is it to come from? The only source is the Japanese government.

Biggest question-mark is iron and steel supply. Present monthly output of machinery for all Japan is placed at 600 tons. The Textile Div. estimates that at this rate 10 yr. would be required to bring rayon capacity up to the levels specified.

For cotton and wool equipment, less metal will be required since the main task is rehabilitating stored spindles. Only 200,000 new cotton spindles are necessary. Coal is short, but the Textile Div. believes that enough will be available to complete the wool and cotton programs by the end of 1949.

WEAK EXPORT POSITION. Granting that conditions permit fulfillment of all the goals, Japan will not be well off for textiles, nor in a powerful export position. The consumer has received practically no cloth during the last 2 yr., will get little more during the next two. When 1950 rolls around, he is sure to demand an appreciable share of the production.

That will be a hard nut to crack. As never before, the cotton and wool branches of the industry will have to create exports which will pay for the necessary imports of raw cotton and wool. In 1936-37, cotton and wool imports exceeded exports of yarn and cloth by $250,000,000. However, silk exports for the same 2-yr. period totalled $270,000,000, which balanced the foreign-exchange account. Present estimates are that silk production will amount to no more than one-third of its former volume. Thus, Japan can no longer rely on silk. Furthermore, as Japan's No. 1 industry, textiles, by means of exports, will have to bear a major portion of the cost of importing the $400,000,000 worth of food needed to feed 80,000,000 Nipponese.

THE 1950 PICTURE. Four million cotton spindles can turn out about 650,000,000 lb. of yarn per year (SCAP worked this out as 800,000,000 lb., ignoring the fact that 10% or more of the spindleage will be idle at any one time). Taking away half of this for export to pay for the raw cotton leaves 325,000,000 lb. Industrial requirements will take about 100,000,000 lb., leaving just about 3 lb. per capita for domestic consumers.

Worsted production from the interim program will run about 75,000,000 lb. per yr., and woolen production about 25,000,000 lb. After 35% of this production is exported to pay for the wool, each Japanese would receive only 0.8 lb. of wool goods.

Only in rayon will the consumer get a break. He is scheduled to get 2.7 lb. annually (216,000,000 lb. of the 300,000,000 lb. output goes for home use).

This adds up to 6.5 lb. of textiles per capita. A little silk for domestic use will make it 7 lb., yet this is 3 lb. short of the 1930-34 average consumption level in Japan.

That is the best that the consumer

TABLE I. Current Production Is Fraction of Prewar Output

Product	1947	1937
	(Monthly averages, in thousands)	
Cotton Yarn	15,000 lb.	110,000 lb.
Cotton Cloth	20,000 sq. yd.	345,000 sq. yd.
Worsted Yarn	640 lb.	9,000 lb.
Woolen Yarn	1,800 lb.	4,000 lb.
Worsted, Woolen Cloth	1,700 sq. yd.	25,000 sq. yd.
Rayon Yarn	900 lb.	28,000 lb.
Staple Fiber	1,000 lb.	14,500 lb.

TABLE II. Big Ten Cotton Spinners of Japan Own 95% of Capacity

Spinning Company	Owned Spindles	Operable Spindles
	(In thousands)	
Toyo	523	391
Dai Nippon	463	362
Daiken	429	320
Kanegufuchi	415	208
Shikishima	374	260
Daiwa	369	199
Fuji	325	295
Kurashiki	316	238
Nisshin	288	234
Nitto	186	159

TABLE III. Production and Home Consumption of Rayon in Japan, 1930–1945

(In thousands of pounds)

	Production:		Home Consumption:[2]	
	Rayon Yarn[1]	Rayon Staple	Rayon Yarn	Rayon Staple
1930	36,600	Unknown	19,483	0
1931	52,270	Unknown	27,851	0
1932	73,685	550	26,904	550
1933	103,291	965	60,962	965
1934	166,545	4,720	87,120	4,720
1935	210,828	13,625	103,885	13,625
1936	273,095	45,850	135,058	45,850
1937	335,967	175,494	190,518	145,331
1938	213,904	327,209	124,413	299,611
1939	238,563	301,267	138,893	236,768
1940	216,094	285,816	114,041	220,256
1941	68,100	296,604	105,373	237,150
1942	95,412	174,451	73,390	155,456
1943	50,431	121,739	35,803	109,732
1944	22,811	83,308	14,415	75,067
1945	5,623	21,893	4,193	20,900

[1] Production of rayon yarn includes cuprammonium.
[2] Excludes military consumption which is unknown.
Source: Ministry of Commerce & Industry, and Federation of Japanese Textile Associations.

TABLE IV. Japan's Rayon Exports 1937–1945

(In thousands. Cloth in sq. yd., others in lb.)

	Rayon staple	Spun-rayon yarn	Spun-rayon cloth	Filament rayon	Filament-rayon cloth	Rayon fabricated items[1]
1937	17,953	8,190	16,753	59,480	485,098	5,992
1938	2,556	10,557	60,357	29,754	337,043	4,135
1939	40,372	12,539	48,286	40,820	309,928	7,718
1940	38,570	21,178	24,220	62,112	211,702	5,011
1941	34,917	19,608	20,538	43,899	97,569	2,730
1942	13,262	2,523	13,376	15,908	34,683	392
1943	7,224	1,489	13,725	6,443	47,251	389
1944	3,881	46	17,974[2]	1,925	39,215[2]	0
1945	555	1	2,121[2]	774	3,182[2]	0

[1] Includes manufactured articles such as knit goods, clothing, etc., not included in cloth exports.
[2] Estimated.
Source: Ministry of Commerce & Industry, and Federation of Japanese Textile Associations.

can hope for in 1950. Until then, Harold S. Tate, head of the Textile Div., says each Japanese will get about 2 lb. per year. The Far Eastern Commission has authorized 2¼ lb., if available.

Most Japanese textile men take strong exception to the cotton figure. They believe that Japan will have to export at least 70% of the production from its 4,000,000 spindles to pay for its cotton and for part of the food to supply the cotton workers. Some Textile Div. heads are beginning to agree, but it is doubtful whether capacity in excess of the specified figure can be achieved before 1950. Demands from every other industry for coal and steel mean small cuts of the pie for any one segment of the economy.

Export of 450,000,000 lb. of cotton by Japan will not make much of a dent in the demand from other Asiatic countries, where lack of textiles in the marketplaces has eliminated the farmers' chief incentive to produce more food. Unless they have some assurance of receiving more goods in return, particularly textiles, Asia's farmers won't turn in surplus rice. A considerable part of Asia's food shortage can thus be laid to the shortage of textiles.

The Textile Div.'s cotton program does not mention a numerical limit for looms. It assumes that loomage will develop in proportion to the amount of yarn available. Some expansion will be allowed by SCAP in production of looms over 45 in. in width. Below that size, there are more than enough looms already.

Similar thinking is back of the wool program. "Capacities of those branches of the industry which further utilize and process wool yarn will necessarily develop in proportion to the available supply of yarn," according to SCAP. Operable wool looms now total about 11,000. Composition of this branch has changed. Authorized worsted spindleage is just about half the prewar total; while 815 woolen cards are authorized, compared with a prewar level of 685. Further expansion will maintain about the same ratio between worsted and woolen.

New ratios are plotted for synthetic fibers. Rayon filament yarn will make up 55% of production, compared with a previous 40% share. Increased foreign demand for filament is largely responsible for the new emphasis.

THE POWER ANGLE. Operation of the textile industry at the levels planned will require close to 4,000,000 tons of coal per year. Unless there is a big increase in current production—running about 26,400,000 tons per year total, textile mills are unlikely to get enough to permit operation even at these modest capacities. Despite monthly calls by SCAP and the Japanese government for more and still more coal, no increases are in sight.

Electric power is also a problem. Although more power is now being generated than at any time in Japan's history, every textile mill (every manufacturing plant, for that matter) complains of ever more frequent power interruptions. During August, the Toyko rayon plant at Ohtsu had 60 such stoppages of from 10 min. to 2 hr. Obviously there is a gross misuse of electric energy. Following its usual lenient policy toward the Japanese

(*Continued on page 182*)

TABLE V. Production and Home Consumption of Wool in Japan, 1930–1945

(In thousands of pounds)

Year	Production		Home Consumption[1]	
	Worsted	Woolen	Worsted	Woolen
1930	20,556	38,000	27,851	38,097
1931	37,808	33,000	46,347	33,292
1932	52,355	40,000	53,977	40,295
1933	80,938	50,000	79,275	50,132
1934	81,047	35,000	75,956	35,091
1935	90,503	42,000	86,210	42,062
1936	103,172	52,000	96,919	52,046
1937	98,902	49,000	92,072	49,004
1938	62,483	56,000	54,846	56,001
1939	58,516	64,000	50,472	64,000
1940	38,254	50,800	32,525	50,800
1941	45,420	46,037	40,840	46,037
1942	30,043	32,720	29,361	32,720
1943	22,541	29,768	22,257	29,768
1944	10,199	9,819	10,241	9,819
1945	4,398	9,530	.....	.....

[1] Includes yarns manufactured into export goods.
Source: Textile Bureau, Ministry of Commerce & Industry.

TABLE VI. Imports and Exports of Japan's Wool Items, 1930-1944

(In thousands. Cloth in sq. yd; others in lb.)

Year	Yarn Import		Yarn Export	Cloth Export		Other Wool Products
	Worsted	Woolen	Worsted[1]	Worsted	Woolen	
1930	7,911	97	616	2,785	205	174
1931	9,237	292	698	1,314	84	341
1932	2,911	295	1,289	4,086	548	1,122
1933	1,505	132	3,168	9,449	1,270	2,567
1934	828	91	5,919	19,725	1,171	6,963
1935	1,026	62	5,319	20,073	2,347	7,084
1936	887	46	7,140	27,107	3,469	7,580
1937	571	4	7,401	29,941	2,481	3,608
1938	83	1	7,720	14,401	4,597	6,138
1939	.....	...	8,044	18,372	2,000	4,926
1940	.....	...	5,729	13,900	1,817	2,193
1941	.....	...	4,580	8,806	2,000	1,407
1942	.....	...	682	1,190	2,977	389
1943	.....	...	284	724	1,321	79
1944	.....	...	192	.....	.....	.....

[1] No woolen yarn exported.
Source: Textile Bureau of Ministry of Commerce & Industry, and Japan Wool Industry Federation.

TABLE VII. 1946–47 Production of Wool Goods in Japan

(In thousands. Cloth in sq. yd.; yarn in lb.)

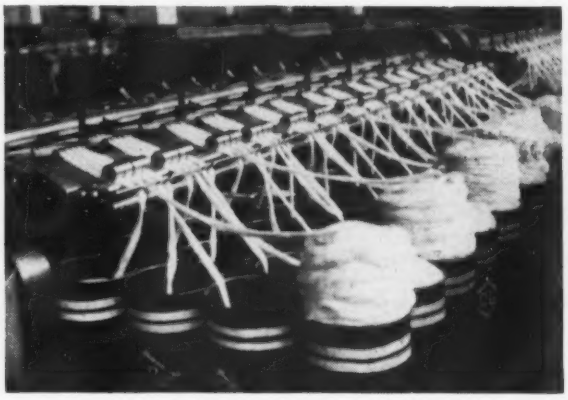
1946	Worsted Yarn	Woolen Yarn	Worsted Cloth	Woolen Cloth
January	255	1,037	229	578
February	349	1,441	444	1,090
March	406	1,271	709	1,935
April	451	1,768	387	2,109
May	523	2,002	336	2,388
June	730	1,941	404	1,045
July	586	1,856	399	1,319
August	561	2,004	559	1,200
September	648	2,088	617	1,432
October	804	1,963	576	1,410
November	841	2,063	459	1,489
December	833	1,753	374	1,450
1947				
January	712	1,562	415	1,333
February	659	1,527	398	985
March	567	1,671	464	1,297
April	675	2,073	515	1,587
May	677	2,106	465	1,539
June	597	2,060	514	1,461

Source: Japan Wool Industry Federation.

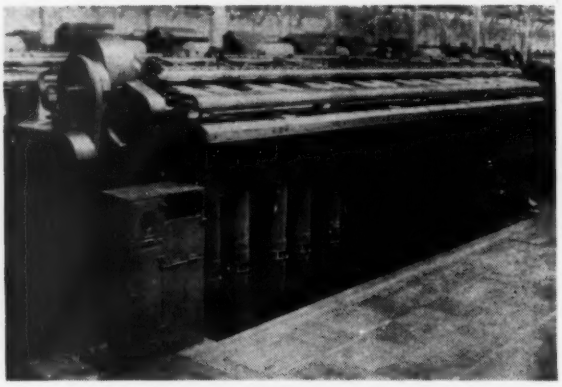
JAPANESE TEXTILE INDUSTRY

EQUIPMENT, TECHNOLOGY
Range From Good to Ancient

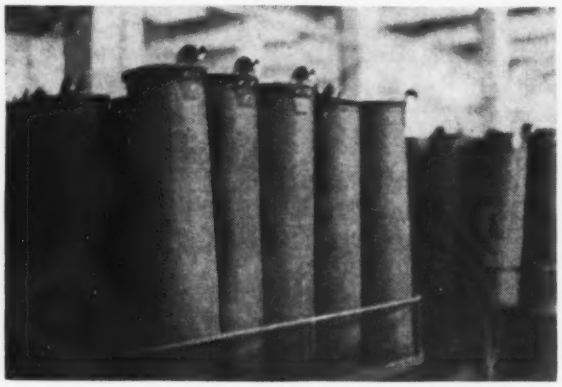
NEW TOYODA SUPER-HIGH-DRAFT



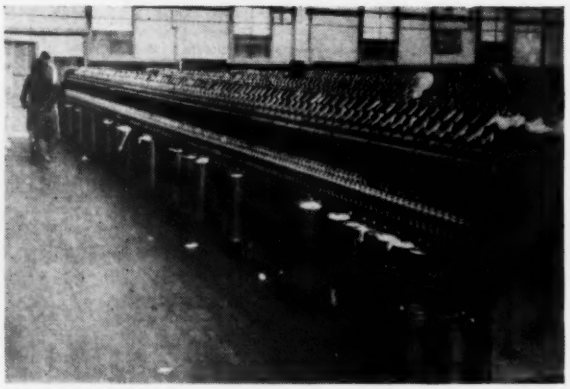
***Four slivers** are delivered to the final drawing frame of the Toyoda system.*



***Sliver from third drawing** is received in special sliver can. Sliver passes straight into can, which is stationary.*

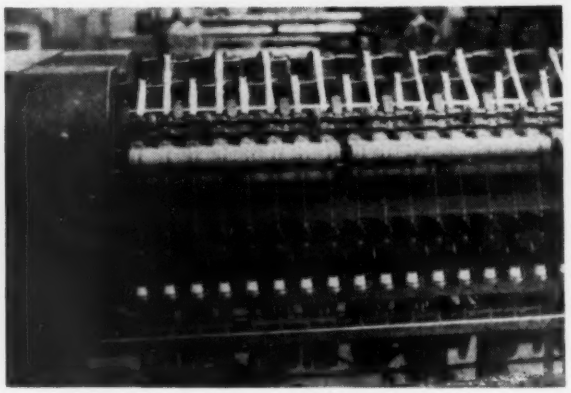


***Special sliver** cans are equipped with a guide for feeding sliver to spindle.*



***Length of frame** is dramatized in this view of Toyoda's super-high-draft spinning frame.*

***This** view of the super-high-draft spinning frame shows line of sliver cans running down center of frame.*



***Close-up shows** spinning of yarn directly from sliver—no roving operations.*

HIGHLIGHTS: *Japanese use high drafts for practically all cotton spinning—Winding and warping "lousy"—Rayon manufacture cannot compete—Wool equipment good but plant layouts are not—Manufacture of machinery shows modern trends.*

By A. W. JESSUP

SPINNING SYSTEM

PHOTOGRAPHS SHOWN HERE illustrate the new super-high-draft spinning system used by Minsei Spinning Co. with an installation of 18,840 spindles. This system was developed and manufactured by Toyoda Loom Works. Processing of cotton is standard up to the drawing frame. Three-pass drawing system is used. First and second drawing frames are ordinary type. The third is special.

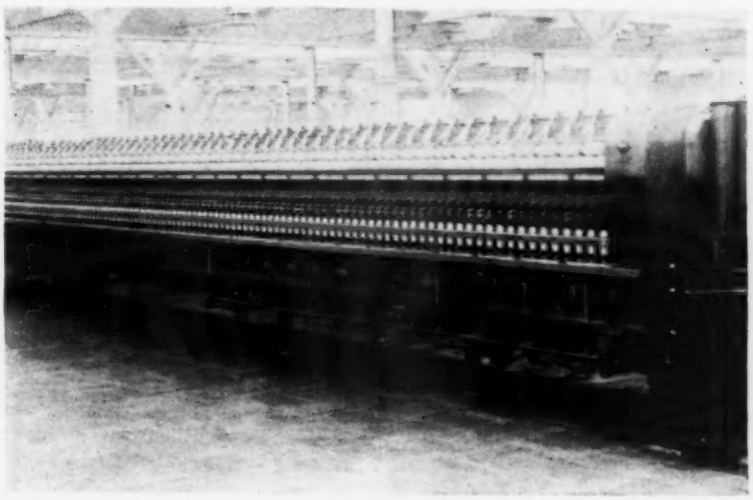
On the first and second drawing frames there are six slivers to one delivery. Draft is the same on both frames: 4th to 3rd rolls, 1.39; 3rd to 2nd rolls, 1.78; 2nd to front rolls, 2.29. The third frame takes four slivers to one delivery. The draft is: 4th to 3rd rolls, 1.39; 3rd to 2nd rolls, 1.75; 2nd to front rolls, 2.88.

Sliver cans for the third drawing frame are of special small size, holding 8¼ lb. These do not revolve while receiving the special thin sliver. These small cans are then mounted on the center line of the super-high-draft spinning frame, and one sliver is delivered directly to the drafting assembly for one spindle.

Because of the present shortage of cotton in Japan, spindle speeds are now slowed to 8,500 rpm. The draft is 67 to 68 for 20s, but can be increased to 100. Roller angle is 55°, but new frames being designed have a roller angle of 45°. One tape drives eight spindles. Width of tape is 10 mm. for 19-mm. spindle whorl. Roll pressures are: Back roll, 2.5 kg.; 3rd roll, 2.5 kg.; 2nd roll, 1.7 kg., front roll, 2.1 kg.

For American cotton, spinning 20s, the drafts are: 4th to 3rd rolls, 2; 3rd to apron, 2.44; apron to front roll, 13.67. Production is running about 0.55 lb. of yarn per spindle per day of 16 hr.

Tests on 20s yarn spun from American cotton from April to September averaged: moisture content, 7.57%; breaking strength, lea (lb.) 79.33 and single yarn (grain) 350.75; elongation, 9.05%; twist, 20.84; draft 67.1.



Super-high-draft spinning frame is viewed here at eye level to show the low compactness of this equipment. *(Photos by McGraw-Hill* WORLD NEWS*)*

MACHINERY EXPERTS of the Textile Div., of the Economic & Scientific Section of SCAP's GHQ, classify Japan's present equipment as good in cotton, fair in wool, and ancient in rayon.

In the cotton mills, cleaning equipment and processes are superior to those in the United States, according to these experts. Part of the reason for this is that the Japanese have always purchased cheaper cotton and made the best of it. The comb boxes are "superior," with no vibration. Cards are excellent. Most of the card clothing, however, is in bad shape; but the clothing manufactured is not inferior to that of the U. S., according to the Textile Div.

Most of the drawing is three-process and is good. Practically all spinning is long draft. However, small rings (1½-in.) are used and a 5½-in. lift. Spindle speeds range from 7,500 to 10,000 rpm. There is some disagreement as to the quality of the spinning, but there is no question that the small package increases handling time and decreases the efficiency.

Winding and warping are classified as "lousy" and slow. Slashers are good. At present, there is a serious shortage of sizing. Mills are using tapioca, sweet-potato starch, and clay.

Looms generally are excellent, with the Toyoda loom ranked as one of the world's best. There is a shortage of wide looms. Only a few of the 136,000 owned in the cotton branch are over 45 in.

Considerable development of super-high-draft spinning processes has been going on. Toyoda Loom Works built an 18,840 spindle mill on this system for the Minsei Cotton Spinning Co., Kariya, Aichi Prefecture, which probably will be duplicated when new capacity is allowed. This method uses three-process drawing, with special small size cans to receive the final sliver. Sliver is supplied directly from this can to the spinning frame (see pictures and description adjoining). Draft for 20s yarn is reported as 78 (Minsei Co. drafts: 67.1).

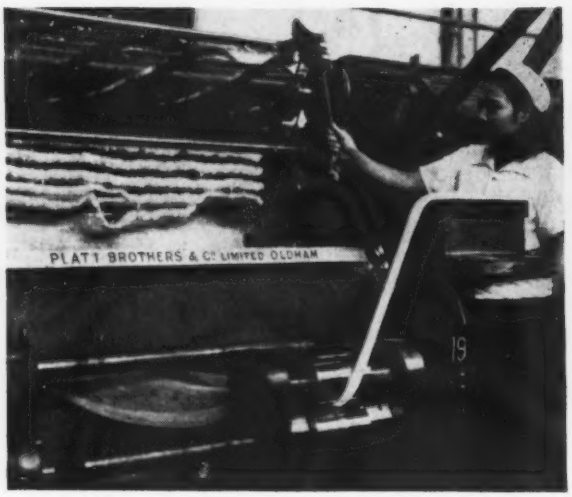
Another super-high-draft spinning frame, developed by Howa Machinery Ltd., does away with weights. Special springs replace the weights, and some parts are eliminated. (Details of this process are not yet available).

Most of the existing wool plants were put up in the early '30s. Equipment is good, but plant layouts are poor. There is one-process picking. Worsted mills are largely on the French system. Most of the mills use mule spinning. Tape condensers for the woolen production are made in Japan; and according to the Textile Div., compare favorably with those

THIS IS CALLED "A TYPICAL JAPANESE COTTON MILL"

Blending of cotton *is done by hand at the openers. [See T.W. July '46 p. 129 for detailed report.]*

Picker laps are shown in readiness for the finisher picker. Note rack for handling of laps from the breaker picker.



A battery of Platt Bros. cards is used. Note woman machine tender.

Operative pieces up sliver for slubber. Cans used here are more conventional than those shown on page 104.

elsewhere. The Japanese are called the world's best blenders by foreign textile men. There is complete recovery of waste.

RAYON PLANTS OUTMODED. Japanese rayon men wish that the war had wiped out all their plants. They would like to rebuild from the ground up. None of their plants are later than 1935 model, and those are unchanged. They literally went "bugeyed" when Textile Div. specialists mentioned continuous-process rayon plants. Not only are their present plants high cost, but their products cannot compete on basis of quality in the world markets.

For the future, they want rights to foreign patents and processes. Lacking capital for new installations, Japanese rayon men hope that foreign investment will come in. Toyo Rayon Co., for instance, is studying the continuous viscose process of Industrial Rayon Corp.

Toyo executives are convinced it will be years, however, before they can go out and buy what is needed for new installations. They are prepared to make generous offers to foreign firms which will supply new equipment or plans and licenses from which new equipment can be manufactured in Japan. With these plans and equipment would have to come foreign technical personnel to establish the process and train Japanese engineers.

Asahi Chemical Industry, Ltd., Teikoku Jinzo-Kenshi Kaisha, Ltd., Toyo Boseki, and Kurashiki Rayon Co. all have the same ideas. Without foreign help to jump the 10-yr. gap between Japan's rayon technology and that of the U. S., they see a grim future for synthetic production in Japan.

Some authorities in ESS believe that, given the right technical aid, Japan's rayon products may one day replace cotton as the leading textile branch in Japan.

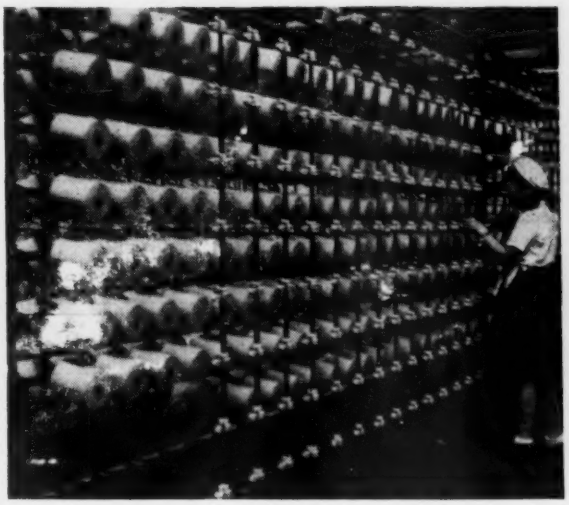
Export markets in Asia still want the cheapest goods. And they believe that the new rayons could capture the bulk of this business. Furthermore, the foreign-exchange profit from rayon is greater than that from cotton, an important factor if Japan is to earn

Dai Nippon Spinning Co. is called a typical Japanese cotton mill. It is equipped largely with machinery from Platt Bros. & Co., Ltd., Oldham, England, or with Japanese equipment manufactured after Platt designs. It is currently the second largest spinning company in Japan, and it has 362,000 operable spindles.

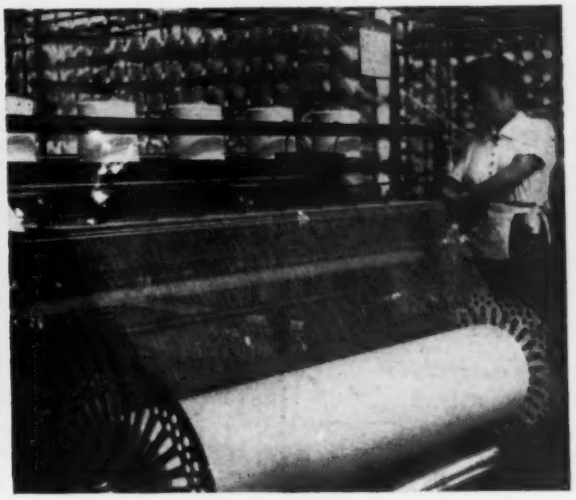
Spinning frame operator is starting to doff.

The yarn is wound on warper packages. Machine tender is tying knots.

Weight is checked after winding. Package is uniform.



Warping is similar to American practice, but parellel tubes replace cones or checscs.



Head end of warper shows wide section beam and provision for adding ends for piece-up, etc.

(Photos by Horace Bristol; also cover photo)

enough money from exports to buy its food. They point out that the U S isn't likely to obtain much of this market anyway, because Asiatics have few dollars with which to buy American products. Investment in Japan's industry might be the best way to get into these markets.

Given the materials with which to work, Japanese industry could turn out all of the equipment needed for re-development of its textile mills and also provide considerable for export. Toyoda Loom Works has a potential capacity of 360,000 spindles and 9,600 looms per year. Howa Machinery, Ltd., will be able to build 360,000 spindles and 7,200 looms when it finishes reinstalling machine tools which were cached during the war. Other pro- ers bring the potential annual output of new spindles well above the million mark. This machinery will be of the most modern, labor-saving types.

All the Japanese equipment manufacturers would like to be working for export now. However, SCAP has banned production of textile equipment for export until its interim rehabilitation program is completed. This has meant the turn-down of a request from India for purchase of 200,000 spindles. Now, a deal is being worked out for 100,000 spindles, with India to supply the iron, steel, and probably part of the coal necessary for this manufacture.

When the occupation ends, the pressure on machinery manufacturers to export will be great. It might even be such as to delay further expansion of the domestic textile industry. For most firms, it would be more profitable to export; and need for foreign exchange might make exportation of machinery more immediately important as opposed to the delayed return from exportation of textiles. Textile men question this. But Seiichi Nozaki, Howa president, believes this is likely.

Rayon equipment, also, can be manufactured in Japan. Most of that now in operation was built by Japanese firms from foreign designs; future rayon-producing equipment will probably be made using the same procedure.

TABLE I
Leader-Decating Elements

	Minutes
Position piece at machine	0.33
Place end on machine	0.32
Start machine and guide piece	2.14
Turn on steam	0.14
Steam piece	1.61
Off steam; start pump; reverse machine	0.20
Wait for end of piece to come out of machine	1.66
Bring end of piece over roller and through folding device	0.40
Smooth out wrinkles as piece folds onto table	1.37
Stop machine and pump	0.15
Check piece number, enter on production record	0.38
Fold ends of piece and lift onto truck	0.45
Total minutes per piece (1st to 5th piece)	**9.15**
For the sixth piece	
Push full truck away and return with empty	0.97
Total minutes per piece (6th piece)	**10.12**

CHART NO. 1

MAN-AND-MACHINE PROCESS CHART
Leader Decating (Cycle as first performed)

Operator 1	Min.	Machine	Min.	Operator 2
Position piece at machine	.25	Idle	.25	Same as operator 1
Place end on cylinder	.50		.50	Same as operator 1
START machine and guide piece	.75 1.0 1.5 2.0	Run in piece and leader	.75 1.0 1.5 2.0	Same as operator 1
Turn on steam	2.5		2.5	
Idle	3.0 3.5 4.0	Steam piece and run in leader	3.0 3.5 4.0	Idle
off steam; on pump, reverse machine	4.5		4.5	
Idle	5.0 5.5 6.0	Run out leader	5.0 5.5 6.0	
end over roller, through folding device	6.5		6.5	Same as operator 1
Smooth out wrinkles as piece folds onto Table	7.0 7.5 8.0	Run out piece and leader	7.0 7.5 8.0	Same as operator 1
stop machine and pump	8.5		8.5	
check piece number, enter on production record	9.0	Idle	9.0	Idle
Fold ends of piece, lift onto Truck	9.5		9.5	Same as operator 1
Idle	10.0	Idle	10.0	Push away full Truck and return with empty (once for each 6 pieces)

1st to 5th Pc.		6th Piece	1st to 5th Pc.		6th Piece	1st to 5th Pc.		6th Piece
Tot.	9.15 min.	10.12 min.	Tot.	9.15 min.	10.12 min.	Tot.	9.15 min.	10.12 min.
Work	5.88 min.	5.88 min.	Run	7.67 min.	7.67 min.	Work	5.01 min.	5.98 min.
Idle	3.27 min.	4.24 min.	Idle	1.48 min.	2.45 min.	Idle	4.14 min.	4.14 min.

MAN-and-MACHINE Charts Can Increase Production

IN SOME TYPES OF WORK, there is time in the operating cycle during which the operators have nothing to do. For example, in leader decating during the time that the machine is actually steaming the material, the operators have nothing to do other than to wait until the steaming time is completed. This time is actually idle time for the operators, and an attempt should be made to find something for them to do. They may use this idle time, for example, to check and write, on a production record, the number of the piece processed in the previous cycle or to lift the previously processed piece onto a truck. In any event, a study should be made to determine whether the operators have the time to perform additional work during the machine cycle.

In studying an operation of this type, a man-and-machine process chart shows the relation between the operators' times, when work is being performed by the operators, and the machine, or process, time, during which the operators have no work to do.

LEADER DECATING. For example, assume that the leader-decating operation is performed in the following manner:

CHART NO. 2

MAN-AND-MACHINE PROCESS CHART

Leader Decating (Rearranged operating cycle)

Operator 1	Min.	Machine	Min.	Operator 2
Place end on cylinder	.25	Idle	.25	Same as operator 1
Start machine and guide pieces	.50 .75 1.0	Run in piece and leader	.50 .75 1.0	Same as operator 1
Turn on steam	2.0		2.0	
Idle		Steam pieces and run in leader		Check piece number, enter on production record (of pieces processed in previous cycle)
Fold ends of piece, lift onto Truck (piece processed in previous cycle)	3.0		3.0	Same as operator 1
Idle				Push away full Truck and return with empty (once for each 6 pieces)
Off steam; on pump; reverse machine	4.0		4.0	Idle
Position next piece at machine		Run out leader		Same as operator 1
Idle	5.0		5.0	Idle
End over roller, Through folding device	6.0		6.0	Same as operator 1
Smooth out wrinkles as piece folds onto Table		Run out piece and leader		Same as operator 1
Stop machine and pump	7.0		7.0	Idle

			1st to 5th Pc.	6th Piece
Total	7.99 min.	Total 7.99 min.	Tot. 7.99 min.	7.99 min.
Work	5.50 min.	Run 7.67 min.	Work 5.39 min.	6.36 min.
Idle	2.49 min.	Idle 0.32 min.	Idle 2.60 min.	1.63 min.

HIGHLIGHTS: *Often operator waits for machine or vice versa—Measuring elements indicates best work set-up—Leader-decating time cut 14.2% by typical study.*

By RUDOLPH LEPPLA,

Supervising Standards Engineer, Fortsmann Woolen Co.

Two operators lift a piece of goods from a truck into position at the machine, place the end of the piece on the cylinder, start the machine, and guide the piece so that it will run in straight and without folds along with the leader.

When the piece is in the machine, one operator turns on the steam and allows the piece to steam for the prescribed time. During this steaming time, of course, the leader is also running into the machine.

When the steaming is completed, one operator shuts off the steam, starts the pump, and reverses the machine. Then, as the end of the piece comes out of the machine, the operators grasp the end, bring it over a roller and through the folding device, and allow the piece to fold onto the table.

As the piece folds, the operators stand by to make sure that no wrinkles are folded into the piece. When the piece is completely out of the machine and on the table, one operator stops the machine and the pump. He checks the piece number and writes the number on the production record. Then the operators fold in the ends of the piece and lift it from the table onto a truck. This completes the cycle.

SIX-PIECE UNITS. After six pieces have been processed and placed on the truck, one operator pushes the truck to the next station, approximately 40 ft. away, and returns with an empty truck. Truckloads of pieces to be processed are brought to the machine by others.

A time study of this operation gives the data shown in Table I.

This data from Table 1, entered on a man-and-machine process chart, is shown in Chart 1. Man-time and machine-time are shown separately; and it shows that often, when the man is working the machine is idle, and vice versa. The desirable condition of course, is to have both man and machine fully occupied during the operating cycle.

One way to approach this condition is to have the operators perform, while the machine is running, certain elements which are now performed while the machine is stopped. If, for example, the operators let the first piece remain on the table while they guide the second piece into the machine, then they can check the piece number, mark the production record, fold the ends, and lift the first piece onto the truck while the machine is running. Also, the operators can position the third piece at the machine and (after 6 pieces) push away the truckload of processed pieces while the machine is running.

The rearranged operating cycle is shown in Chart 2.

14.2% SAVING. On Chart 1, the time per piece is 9.15 min. for the 1st to the 5th piece and 10.12 min. for the 6th piece, or an average of 9.31 min. per piece. On Chart 2, the average time is 7.99 min. per piece. This is a reduction in the time required to process one piece of almost 14.2%.

This solution is not, necessarily, the only one that can be worked out for this particular operation. For instance, a method might be developed which would make it possible for three men to operate two machines. In any case, it is helpful with operations of this type to make use of man-and-machine process charts to develop the method which will result in the best use of operator time and machine time.

Photo by Cone

Laying down a mix hours in advance of feeding is essential to good-running work.

Cotton OPENING-PICKING— Here's Your Chart to Quality

***HIGHLIGHTS:** Data on settings, maintenance, and waste control summarizes technical requirements of sound opening-picking operation— Adjustment details given to prevent stringiness, weight variation, excessive waste—Oil spray should be held to 0.3% to eliminate loading of card cylinder, doffer, flats.*

By SETH CARTER

ALL THE BENEFITS of skillful classing of cotton may be lost in the opener room by careless opening, feeding, and blending. Too often, most of the carelessness results from unfamilarity with the details of setting, maintaining, and managing the varied equipment in the opening and picking departments. Each superintendent and carding overseer should develop charts, such as shown in accompanying panels, not only for the specific information which the charts will give for the mill's particular machines, but also as a method of disseminating this information to all interested personnel, such as second hands and fixers.

While the information in the charts is applicable to a wide range of equipment and is specific to the last detail, there are also more general factors of opening-picking management that require attention.

For one thing, true blending cannot be obtained unless equal amounts from each bale in the mix are put into the first feeders at each feeding cycle.

Neither is there a substitute for the laying-down of a mix hours in advance of feeding. Cotton must be aerated and fluffed at this stage. Advanced laying-down for conditioning is absolutely necessary in running mixes of high-density bales, regular-compress bales, and low-density country bales. Otherwise, equalized delivery from the feeders and uniform picker laps will not be obtained. In general, four to six hours should pass before newly opened bales are fed to the blending feeders.

OPENING ORGANIZATION. Some opening-room organizations use special cleaners or openers, but most use a well-standardized layout of machines. The standard layout has given satisfactory results over long periods of time, with a minimum of parts repair or replacement. The following organization may be considered as standard after a few modifications are made for special cleaning devices:

Blending feeders, 3 to 6 delivering to one feed table.

Mixing feeders receive cotton from one or more feed tables, mix, and further open the cotton. (Omitted in many mills.)

Vertical openers receive from feed table or mixing feeder but not now placed in tandem as done generally for many years in the past.

Buckley-type openers, either single or in tandem, are also used for cleaning; and recent additions of condenser cage-units improve the operation of these machines and remove a greater amount of small leaf and seed.

Some of the older mills still retain the large-production bale-breakers as the first machine in the opening line. More modern layouts omit the bale-breaker, and substitute three or more blending feeders which deliver as one unit to a feed table or mixing feeder. Up to 75-bale mixes have been blended by multiple blending feeders. In general, the number of bales per mix have been vastly increased over the old method. Improved opening and blending have justified the change.

BEATER SPEEDS. The speeds of the more important cleaning units in the opening line are usually as follows:

Vertical opener, from 300 to 800 r.p.m., with 600 to 650 r.p.m. recommended.

Buckley opener, from 300 to 900 r.p.m., with 600 r.p.m. recommended.

ELIMINATE STRINGINESS. Cotton curl and stringiness are plagues that the carder must know how to eradicate if his opening-picking is going to

Check these adjustments on your opening machines

Blending feeder: Combing-roll to pin-apron settings range from ⅛ to 1 in.; the closer the setting, the less production but the better the opening. Indicators are on each side of the machine for uniform setting. Speed of pin apron may be increased to maintain required production. Set doffer to apron to insure proper removal of cotton from pin apron. Tension on aprons should be sufficient to prevent slippage, but not enough to put undue strain on aprons and pulleys.

Vertical opener: Grid-bar openings range from ¼ to ⅞ in., with ½ in. generally recommended; beater-to-bars settings range from ¼ to 1 in., with ½ to ¾ in. recommended.

Buckley opener: Beater-to-grid-bar settings range from ½ to ⅞ in., with ⅜ in. recommended. The angle and width of grid-bar openings depend upon the amount of trash to be removed from the cotton; larger openings and greater angles increase the amount of good cotton removed.

Vital points to inspect and maintain on opening machines

Blending feeders: Check electrical control, mechanical-feed controls, and signal systems as often as possible to anticipate faulty operation; replace broken slats or aprons, adjust aprons to prevent slippage; remove burrs from pins on lifting aprons; replace stiff or worn leathers on doffers immediately; check settings of combing rolls and doffers periodically.

Vertical opener: Examine picks on beaters, and sharpen or replace all worn picks; check on step lubrication, beater, and grid-bar settings; replace all worn bars; and check on condition of top and bottom grid-cheeks.

Buckley opener: Inspect and replace worn or damaged feed-rolls, and look for worn gears; if beater picks are rounded, reverse the beater; check the balance of the beater, and repair or replace damaged grid-bars; examine settings of bars and condition of cheeks periodically.

Feed tables: Tension on carrier aprons is one of the most important points, but watch the condition and position of the mouthpieces.

Screen sections: Inspect screens for holes or loose end-strips; check leathers, fan draft, and pipe outlets periodically; replace broken slats on aprons and adjust apron tension immediately. Check these adjustments on the picker to control the waste.

Check these adjustments on your picker to control the waste

Beater-to-feed roll setting: The closer the setting, the more the waste produced, but the length of staple governs the setting; blade beaters generally are set 3/16 in. for short and medium-length staple, ¼ to 5/16 in. for long staple; carding beaters usually are set ⅛ to 3/16 in.; note that dull beaters mean less waste, but cause stringy, nitty laps.

Grid-bars-to-beater setting: Set ⅜ in. at top, ¾ in. at bottom; closer settings increase the waste produced, and too close a setting may damage the staple by "rolling"; cast-iron or steel bars, usually 12 to 13 bars in all, are spaced ¼ to 5/16 in., but thin steel bars, usually 16 in number, provide closer settings, permit increased cleaning and waste-removal.

Angle of grid bars: The more edge exposed, the more waste; a good arrangement sets the upper edge so that it protrudes ⅛ in. beyond the lower edge of the preceding bar.

Feed-roll diameters: Use small-diameter roll for short staple, large-diameter roll for long staple; short-staple cotton plucks from the large roll because the bite of roll is too far from the edge of the beater; long-staple cotton projects too far below the edge of the small roll.

Beater and feed-roll speeds: Increased beats per inch mean more waste removed, but excessive beating weakens the fiber, lowers yarn strength; minimum beats per inch consistent with good cleaning and preparation are discussed in text.

Fan speeds: Too strong an air current will carry leaf and dirt along with the air, thus preventing waste from falling through the grid openings.

Damper adjustment: Cleanliness of air passages, snug fitting of the door under dust bars, and frequent dropping of this door will effect the amount of waste and cleanliness of lap produced.

Causes of lap-weight variations: Improper adjustment of evener; slipping cone-belt, or too wide a belt for close regulation; improper distribution of cotton on cages; obstructions or rough spots in passages which cause the stock to collect and then be expelled in lumps; variation in stock-level in the hopper; variation in moisture content. Lap-weight variation should not be greater than ½ lb. lighter or heavier than standard. Modern pickers, with reserve-box feed to finisher sections, seldom have more than 3% rejections. Yard-by-yard weighings from each picker should be made at a minimum of once per week, more if possible, and variation from standard should not exceed ½ to ¾ oz. per yd.

Causes of split laps: Poorly regulated dampers, which do not draw enough cotton to the top cage; too much reworked waste in laps; excessive pressure on brake shoe; lap allowed to run too long after picker has knocked off for doffing; insufficient pressure on smooth calender rolls.

function properly. One point already mentioned, proper conditioning of the cotton in the opening room, will decrease the tendency to curl or string at the vertical opener. One other precaution may be taken at the feeder: Close the combing-roll setting to prevent large lumps from passing through the feeder; and, if necessary to maintain the required production, increase the speed of the lifting apron.

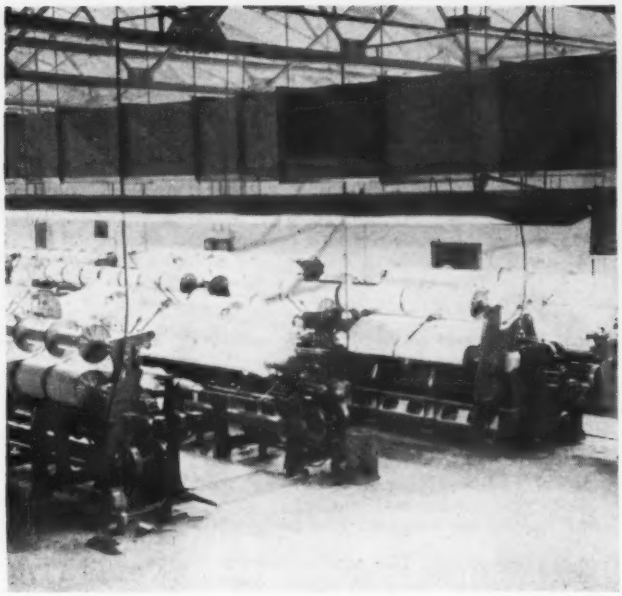
One mill had such a chronic case of stringy cotton (from the vertical opener), that it installed a few of its old, discarded bale-breakers between the feed table and the vertical machines. The cotton thus passed through four blending feeders, feed table, and a modified bale-breaker used as a mixing opener on each line, another case of more opening and blending in order to prevent large lumps of cotton from reaching the vertical opener. When the lumps were eliminated, the stringiness also disappeared.

Increased fan-speeds on condenser and screen sections have also been effective in preventing a curled product at the vertical opener. The increased speed draws the cotton through more quickly and shortens the time in which the beater blades act upon the fiber. It should be recognized, too, that the longer the staple of the cotton, the greater the tendency to curl. For this reason, some mills arrange the conveyor pipes so that the vertical opener may be bypassed when long-staple cotton is introduced into the opening lines.

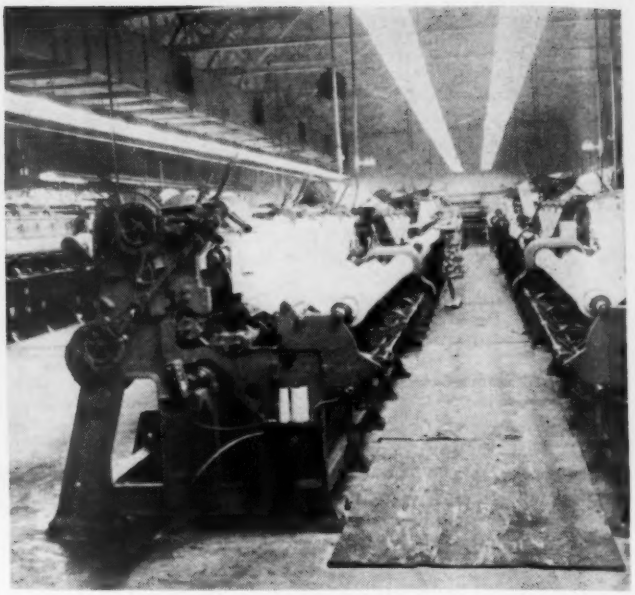
Two other causes of stringy cotton should be recognized instantly by alert card-room supervisors. Damp or wet cotton will often cause stringiness, but little good is done, if everyone in the plant but the opener-room hand realizes this fact. Let the wet bale be exposed to room conditioning until it is dry enough for feeding.

Overloading of opening machinery may also cause cotton curl or string. The general practice on medium

(Continued on page 206)



A versatile combination of varied tricot machines is shown in these three views of the knitting room at A-Q Mills, Timmonsville, S. C.



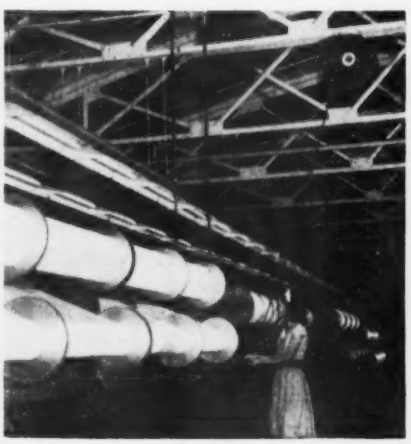
View on the next page is of the newest machine just added, a Robert Reiner. Whitin, Aveco, and others also in this knitting department

TRICOT MILL Versatile In Equipment and Methods

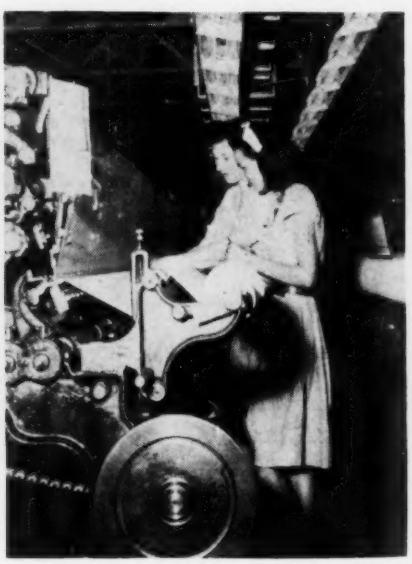
HIGHLIGHTS: *A-Q Mills, Inc., Timmonsville, S. C., develops new operation ideas — Production equipment contains variety of tricot machines—Hydraulic elevator speeds receiving and shipping operations—Plant has one of first refrigerated air-conditioning systems in South.*

By C. MALLARD BOWDEN, *Southern Editor, TEXTILE WORLD*

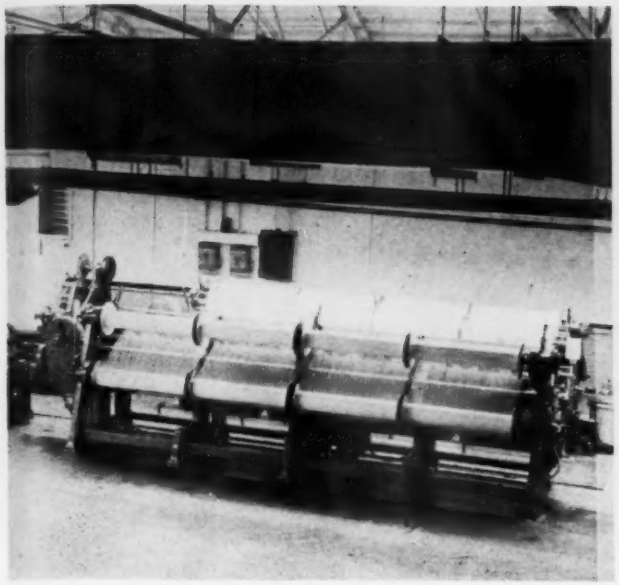
As many as 168 grease nipples are on some tricot machines. Multiply these greasing locations by many machines, and the result is considerable. Here, A-Q Mills uses a low, portable Alemite greasing-unit. It is low enough to approach the cams under the machine or the important head-end mechanism.



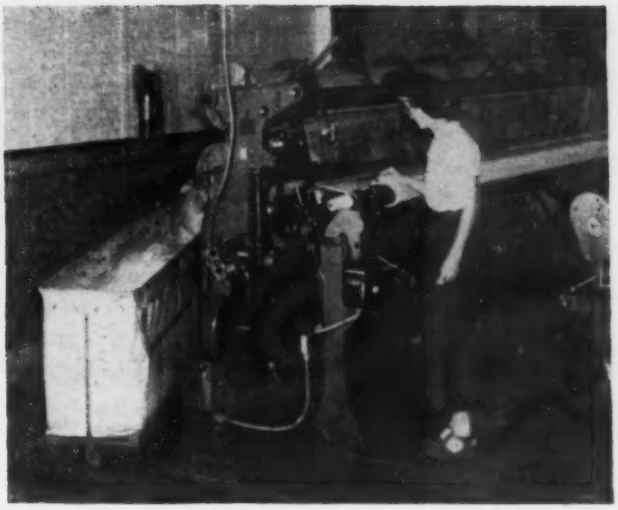
Air power for cleaning is a necessity in a spick-and-span tricot knitting-room, otherwise valuable fabric may be spoiled. An unusual wind-up hose simplifies the use of air. Hose unwinds from a reel encased in a housing in the ceiling of the knitting room. Hose extends 100 ft.; and by placing the hose reels at strategic points, A-Q obtains complete cleanup-coverage without impeding production.



Training of employees is a very necessary part of A-Q's activities as production facilities increase. Here, one of A-Q Mills' knitting operators points out the correct way to repair an end break.



(including simplex types) permit the manufacture of a range of fabrics. Note the air-conditioning ducts.



***Attention to detail** and planning are the sparks of tricot production, as illustrated here by A-Q marking of canvas cloth-trucks. Since trucks are 180 in. long, the job of finding the cloth ticket would be a considerable one if tickets were placed just anywhere within the box. This end of truck is marked "ticket end," and operator will place the fabric ticket there.*

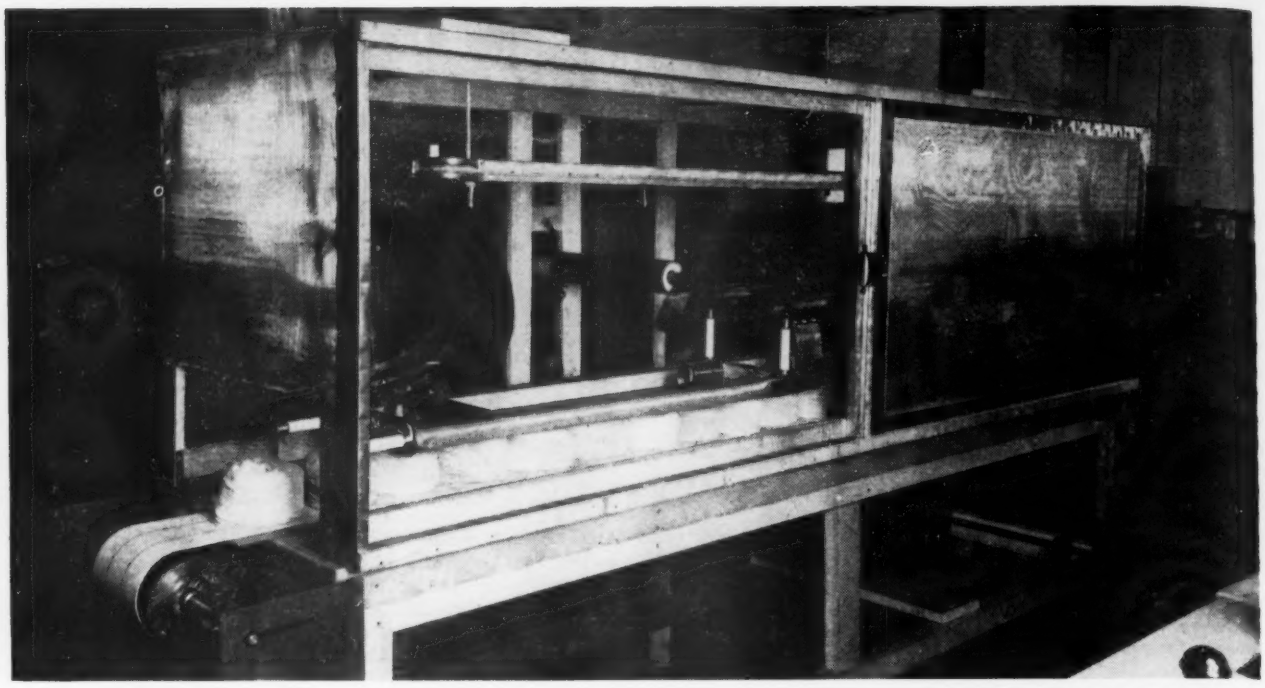
ALMOST A DECADE ago, A-Q Mills, Inc., Timmonsville, S. C., continue to follow a progressive formula of new ideas plus versatile, well-balanced tricot production. A leader in the field of underwear and outerwear tricot fabrics, South Carolina's first tricot mill has varied production equipment, one of the first refrigerated air-conditioning systems in the South, and production skill based upon careful planning and attention to detail. The accompanying photographic highlights give some measurement of the attainments of this mill as it approaches its tenth anniversary.

The mill continues to expand; and, in expansion, it still plans for the systematic handling which has characterized past operation. Examples of the new ideas and some of the old are shown, with emphasis upon the new addition which is equipped with an hydraulic-elevator platform to facilitate the transfer of yarn and other purchased materials into the plant. Similarly, out-going fabric will be speeded in the shipping stages.

But some of A-Q Mills' older ideas continue to be good. Among them are the examples of careful planning in manufacturing details such as the marking of cloth trucks for the proper location of fabric tickets, and the use of special air-hose in the cleaning of machinery.

***Fluorescent lighting** behind the cloth-inspection frame is expected to improve the grading operation. Fabric passes from the back bin over the top roll at left (which is in front of lighting fixtures), then to the front roll, and down to the receiving bin. Usually two operators are employed by A-Q Mills at this inspection operation.*

***Receiving and shipment** of materials is expedited and ample quarters for yarn and fabric storage are provided at A-Q Mills by the new addition partly shown in background. It is serviced by an elevator platform, operated hydraulically. Shown here, an operator demonstrates the new elevator with a box of coned yarn on a Yale & Towne portable lift-truck. Materials handling to and from freight cars will be simplified, and the heavier yarn-packages now coming from rayon manufacturers will be more easily handled. When a freight car arrives, the operator will raise the elevator to the car level, unload the boxes onto the elevator, then drop the elevator to the level of the receiving warehouse.*



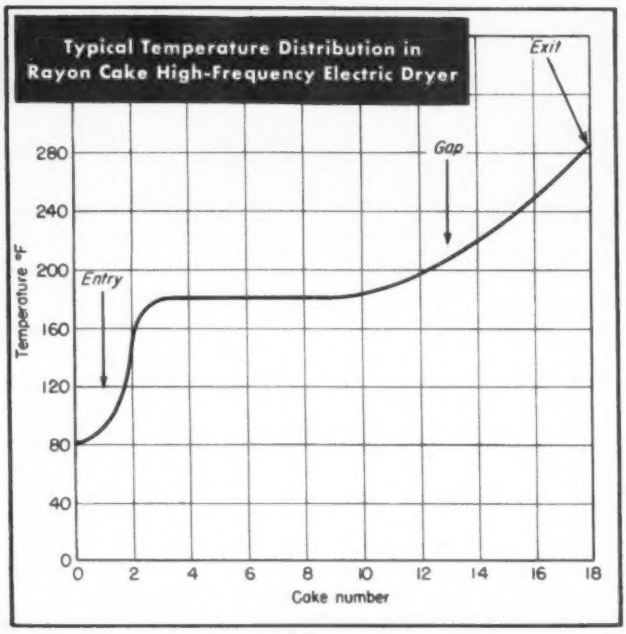
High-frequency drying of cakes can be accomplished in pilot-plant unit 3 ft. 3 in. wide, 19 ft. 9 in. long, and 5 ft. high.

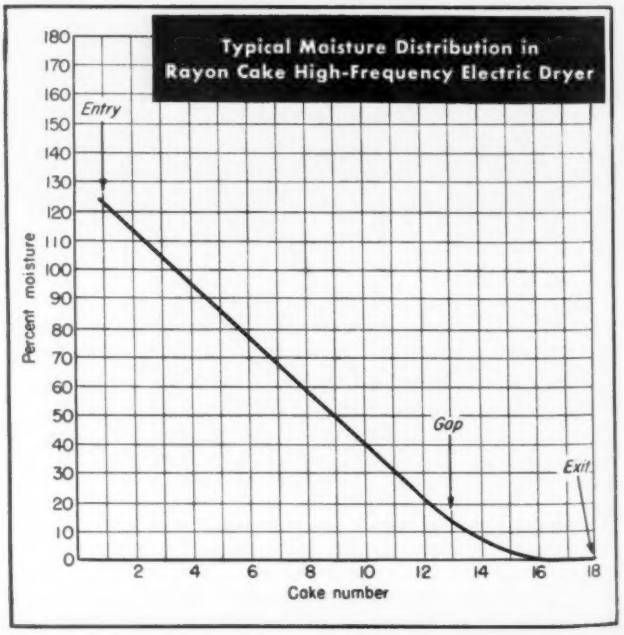
CAKE DRYING Speeded By High-Frequency Current

HIGHLIGHTS: *Time cut from days to 1 hr. or less—Voltage stepped up as cakes dry—Conveyor dryer recommended—Cost higher than steam drying, but method has specific advantages—Three major producers installing system—Applicable for throwsters.*

By T. H. STORY

T. H. Story is a member of the Engineering Section, Engineering Products Dept., RCA Victor Div., Radio Corp. of America.



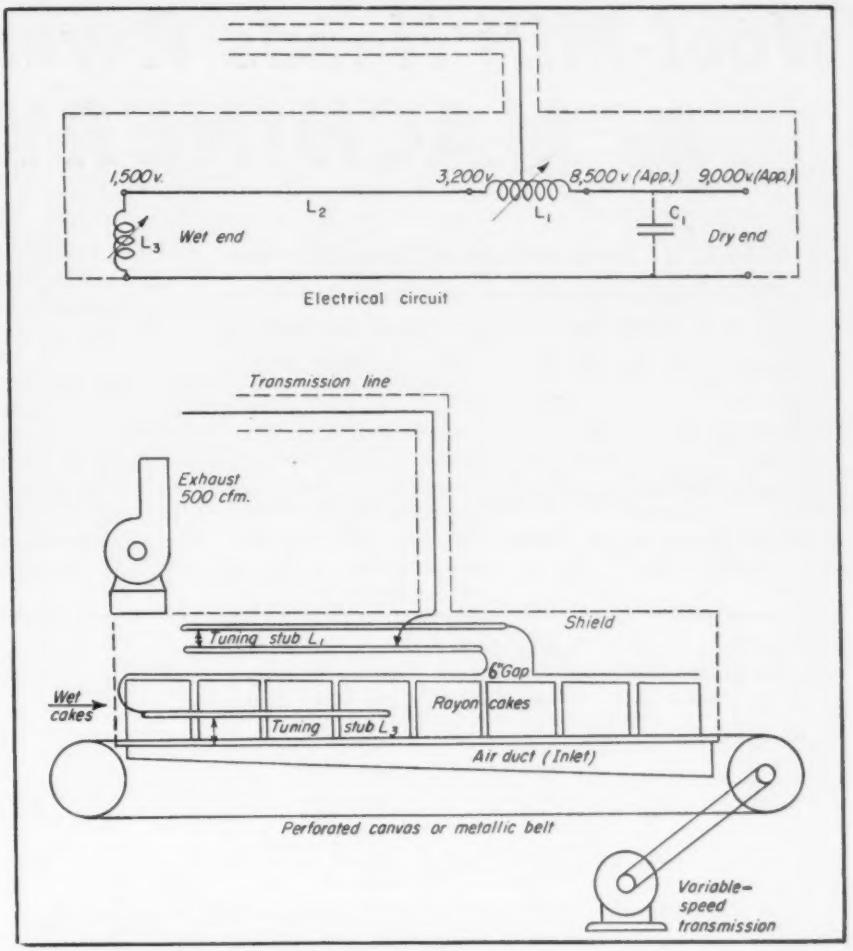


THE TEXTILE INDUSTRY has been one of the leading pioneers in the development and adoption of high-frequency dielectric heating as an industrial tool. Most of the pioneering with high-frequency heating has been done by the manufacturers and processors of synthetic textiles, particularly rayon, the lustiest and most rapidly developing branch of the textile family.

The manufacturers and processors of the natural fibers have not been blind to this new development, however, and have investigated it extensively, though they have not been so quick to adopt it for production.

Experiments with high-frequency heating have been numerous in the textile field, and its possible applications appear wherever heat is used in processing. At present, only two processes have reached the stage of large-scale productive employment; namely, rayon-cake drying and twist setting.

Of these two, the greater potentialities for both equipment installation and power consumption are in the field of cake drying.



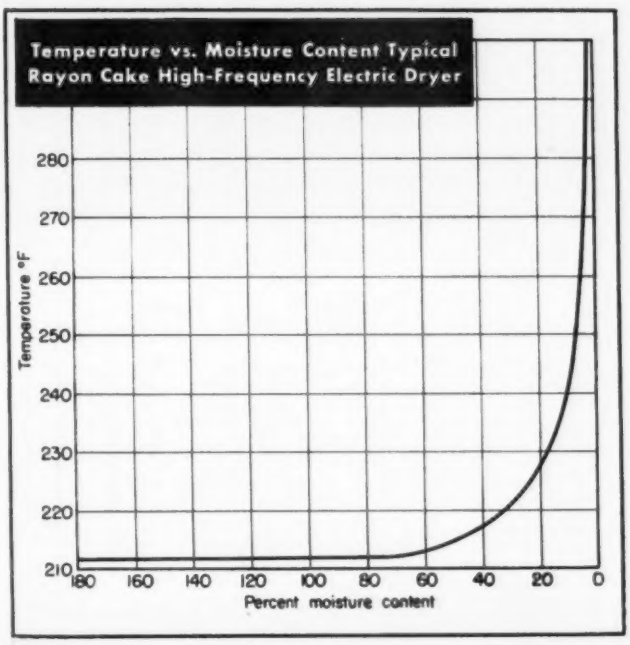
Simplicity of the conveyor is a feature of high-frequency dryer for rayon cakes.

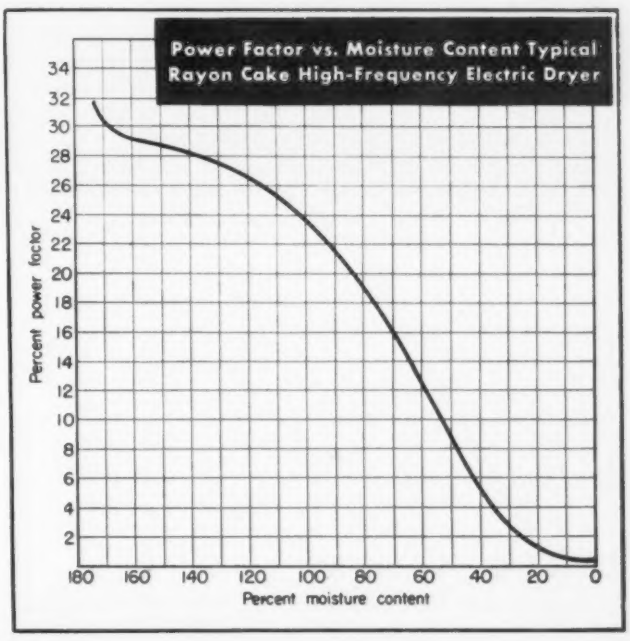
RAYON-CAKE DRYING. At least six leading American rayon manufacturers have been operating cake-drying pilot plants for from 1 to 3 yr.; and three plants, one of which is European, have placed orders for their first large-scale production equipment.

The chief advantage of high-frequency cake drying lies in quality improvement. The most important is the reduction in mean shrinkage variation from inside to outside of the cake. In oven-drying, the outside of the cake dries first and attempts to shrink. However, being restrained by the still-wet core, it stretches. The inside of the cake is not similarly restrained and therefore does shrink. The resultant variation in shrinkage may be 2% or greater which produces differences in shading when the finished piece is dyed.

High-frequency heating dries the entire cake simultaneously, uniformly, and rapidly. Drying time is cut from 3 or 4 days to 30 to 60 min. Mean shrinkage variation is below 0.4%.

(Continued on page 208)





Wool-Mill Needs Revealed By MACHINERY SURVEY

HIGHLIGHTS: *Survey made for McGlynn Hays Industries, Inc., determines machinery modification needs—Higher speeds, less vibration, larger packages cited by mills—Spinning organization of mills shown by charts.*

HIGHER SPEEDS, larger packages, less friction and vibration, and smoother-running spindles are the improvements most desired by 108 mills, each having over 8,000 spindles, as major objectives in the redesigning of woolen and worsted spinning machines. This conclusion was one of the results reached in a market survey of the woolen and worsted machinery industry made by Turck, Hill & Co., New York industrial engineers, for McGlynn Hays Industries, Inc., Belleville, N. J., a firm that has recently entered into textile-machinery manufacture. The specific survey reviewed here was undertaken to determine the basic improvements in machinery needed and desired by mills as a result of expanding markets and rising labor costs. This was part of an extensive study made for the machine builder before manufacturing operations were begun.

In replies to a series of questions regarding needed machinery improvements and manufacturing organization, mills contacted offered the consensus that they were extremely interested in cooperating in machinery develop-

Table I

Number of Establishments with French Spinning Spindles in Place, Classified According to the Size of Yarn Spun, or Sizes Practical to Spin

Worsted Count	Average Size of Yarn Usually Spun			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	....	.....	....	....
50s to 59s	....	.....	....	....
40s to 49s	4	72,804	14%	11%
35s to 39s	(A)	(A)	(A)	(A)
30s to 34s	10	194,914	34	29
25s to 29s	10	283,940	34	42
20s to 24s	5	119,664	18	18
15s to 19s	(B)	(B)	(B)	(B)
10s to 14s	....	.....	....	....
Coarser than 9s	....	.....	....	....
Total	29	671,322	100%	100%

Worsted Count	Coarsest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	....	.....	....	....
50s to 59s	....	.....	....	....
40s to 49s	....	.....	....	....
35s to 39s	....	.....	....	....
30s to 34s	....	.....	....	....
25s to 29s	....	.....	....	....
20s to 24s	(C)	(C)	(C)	(C)
15s to 19s	14	330,992	48%	49%
10s to 14s	11	199,032	38	30
Coarser than 9s	4	141,298	14	21
Total	29	671,322	100%	100%

Worsted Count	Finest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	12	384,798	42%	57%
50s to 59s	9	218,504	31	33
40s to 49s	5	48,820	17	7
35s to 39s	3	19,200	10	3
30s to 34s	(D)	(D)	(D)	(D)
25s to 29s	....	.....	....	....
20s to 24s	(D)	(D)	(D)	(D)
15s to 19s	....	.....	....	....
10s to 14s	....	.....	....	....
Coarser than 9s	....	.....	....	....
Total	29	671,322	100%	100%

(A) Included in 40s to 49s classification.
(B) Included in 20s to 24s classification.
(C) Included in 15s to 19s classification.
(D) Included in 35s to 39s classification.

Table II

Number of Establishments with Bradford Spinning Spindles in Place, Classified According to the Size of Yarn Spun, or Sizes Practical to Spin

Worsted Count	Average Size of Yarn Usually Spun			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	....	.....	....	....
50s to 59s	....	.....	....	....
40s to 49s	7	46,125	5%	4%
35s to 39s	3	29,401	2	2
30s to 34s	23	277,636	17	22
25s to 29s	21	358,418	16	28
20s to 24s	28	247,750	21	19
15s to 19s	32	237,416	24	18
10s to 14s	12	66,454	9	5
5s to 9s	8	23,073	6	2
Coarser than 5s	(A)	(A)	(A)	(A)
Total	134	1,286,271	100%	100%

Worsted Count	Coarsest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	....	.....	....	....
50s to 59s	....	.....	....	....
40s to 49s	....	.....	....	....
35s to 39s	....	.....	....	....
30s to 34s	(B)	(B)	(B)	(B)
25s to 29s	....	.....	....	....
20s to 24s	17	140,839	13%	11%
15s to 19s	22	152,928	16	12
10s to 14s	39	379,047	29	30
5s to 9s	37	468,538	28	36
Coarser than 5s	19	144,919	14	11
Total	134	1,286,271	100%	100%

Worsted Count	Finest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
60s or finer	7	151,262	5%	12%
50s to 59s	28	393,592	21	31
40s to 49s	22	273,185	17	21
35s to 39s	6	80,876	4	6
30s to 34s	20	155,262	15	12
25s to 29s	12	67,811	9	5
20s to 24s	25	113,053	19	9
15s to 19s	8	34,102	6	3
10s to 14s	6	17,128	4	1
5s to 9s	(C)	(C)	(C)	(C)
Coarser than 5s	(C)	(C)	(C)	(C)
Total	134	1,286,271	100%	100%

(A) Included in 5s to 9s classification.
(B) Included in 20s to 24s classification.
(C) Included in 10s to 14s classification.

TABLE III

Woolen Spinning Spindles, Mules and Frames in Place, by Size and Bobbin Length

Type of Equipment	Number of Mule Spindles by Package Dia.					Number of Frame Spindles by Ring Dia.			Total Mule and Frame Spindles
	Under 2-in. dia.	2 to 2¼-in. dia.	2⅜ to 2¾-in. dia.	Over 2¾-in. dia.	Total	4½-in. dia. and under	Over 4½-in. dia.	Total	
Woolen Spinning Spindles									
Bobbin Length									
Less than 8 in.	59,775	74,484	21,497	.....	155,756	.....	(A)	(A)	155,756
8 in.	150,028	292,820	48,705	2,628	494,181	5,051	3,102	8,153	502,334
8.1 to 8.9 in.	86,533	343,028	44,091	.....	473,652	12,889	912	13,801	487,453
9 in.	13,953	92,577	32,389	2,364	141,283	(A)	(A)	(A)	141,283
9.1 to 9.9 in.	.....	(A)	28,462	.....	28,462	(A)	(A)	(A)	28,462
10 in.	3,550	16,425	7,844	7,009	34,828	38,094	6,330	44,424	(B) 79,252
10.1 to 10.9 in.	(A)	12,021	(A)	.....	12,021	31,845	(A)	31,845	43,866
11.0 to 11.9 in.	.....	.....	.....	(A)	(A)	7,523	(A)	7,523	7,523
12 in.	.....	.....	.....	(A)	(A)	14,964	89,441	104,405	104,405
12.1 to 12.9 in.	.....	(A)	.....	.....	(A)	8,211	33,197	41,408	41,408
13 in. and over	.....	9,994	35,300	9,720	55,014	2,873	3,921	6,794	61,808
Total	313,839	841,349	218,288	21,721	1,395,197	121,450	136,903	258,353	1,653,550
Woolen Mules or Frames	1,026	2,830	744	81	4,681	727	1,192	1,919	6,600

(A) Included in 10-in. classification to avoid disclosing data for individual establishments.
(B) Includes 23,796 spindles reported in other bobbin length classifications, but which could not be shown separately without disclosing data for individual establishments.

ment in order to obtain more efficient operation and cost reduction. The mills also expressed a desire to see newly developed equipment introduced.

A wide variety of needs was expressed in answer to the question, "What are the difficulties with present designs of spinning machinery which should be overcome in new equipment to obtain more efficiency, higher production, and lower operating costs?" The requirements most often mentioned for ring frames were fewer ends down, higher spindle speed, larger supply and delivery packages, elimination of vibration, and elimination of double spinning. Other needs listed were: less attention by operators, overcoming of friction, overcoming of traveler limitation of speed, lowered upkeep cost, and a system for removing fly waste. Several carpet companies also suggested the following improvements: better spindle clutch, twister head and nippers, lubrication system for ring and traveler; increased life of bobbins; faster production; automatic doffing; a method of controlling balloon on large rings at high speed; more efficient scavenger rolls; and improved ring-and-traveler wear at speeds above 5,000 ft. per min.

Most frequently listed among needed improvements in mules was a larger package. Other needs included: higher spindle speeds, less complicated mechanism, a more easily removable cylinder, a stronger draft scroll, improved step boards, longer rope life, a stronger center frame of the carriage, a stronger holding-out latch, an improved sheave hanger, heavier top rollers, and improved capacity of draft pulley. One mill expressed the need for some means of compensating for the extra weight and twist when mule bobbins are nearly full.

Twister improvements needed, according to the survey, followed closely the needs of ring frames—fewer ends down, less operator attention, higher spindle speeds, larger creel and delivered packages, reduction of friction, lengthened traveler life. Other improvements wanted: better oiling system, more easily removable cylinder, a stronger builder motion, improved ring-and-traveler lubrication, a reduction of bending and reaching by the operator, and a more positive clutch.

Table IV

Number of Wool-Manufacturing Establishments with Woolen Spinning Spindles in Place, Classified According to the Size of Yarn Spun, or Sizes Practical to Spin

Yards per Pound	Average Size of Yarn Usually Spun			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
9,000 or more	....	.....	....	....
8,000 to 8,999	5	35,225	1%	2%
7,000 to 7,999	5	18,970	1	1
6,000 to 6,999	24	116,410	5	7
5,000 to 5,999	20	115,831	4	7
4,000 to 4,999	82	367,314	17	22
3,000 to 3,999	104	268,002	22	16
2,000 to 2,999	154	503,779	33	31
1,000 to 1,999	71	204,723	15	12
Less than 1,000	9	23,096	2	2
Total	474	1,653,550	100%	100%

Yards per Pound	Coarsest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
9,000 or more	....	.....	....	....
8,000 to 8,999	....	.....	....	....
7,000 to 7,999	....	.....	....	....
6,000 to 6,999	....	.....	....	....
5,000 to 5,999	....	.....	....	....
4,000 to 4,999	12	49,979	2%	3%
3,000 to 3,999	41	168,570	9	10
2,000 to 2,999	109	403,719	23	24
1,000 to 1,999	257	870,594	54	53
Less than 1,000	55	160,688	12	10
Total	474	1,653,550	100%	100%

Yards per Pound	Finest Size of Yarn Practical to Spin			
	Number		Percent of Total	
	Establishments	Spindles	Establishments	Spindles
9,000 or more	53	326,701	11%	20%
8,000 to 8,999	61	244,007	13	15
7,000 to 7,999	29	135,617	6	8
6,000 to 6,999	63	213,255	13	13
5,000 to 5,999	38	138,366	8	8
4,000 to 4,999	89	249,362	19	15
3,000 to 3,999	82	171,037	17	10
2,000 to 2,999	43	146,474	9	9
1,000 to 1,999	16	28,731	4	2
Less than 1,000	(A)	(A)	(A)	(A)
Total	474	1,653,550	100%	100%

(A) Included in 1,000 to 1,999 classification.

ORGANIZATION. Interesting information on the organization of the worsted spinning division of the textile industry resulted from an analysis of direct inquiries to 108 mills and data of the Department of Commerce and other cooperating services of information. Each of the mills was asked:

1. What is the average count you are spinning?
2. What is the average twist per inch used?
3. What are the average and maximum drafts obtained?
4. What is the trend in ring diameters, length, or traverse?
5. What are the gage and number of spindles?

Of French worsted spinning establishments, 68% of the total with 71% of total spindles use a worsted count of 25s

(*Continued on page 186*)

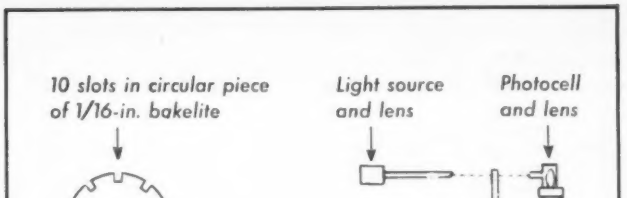

10 slots in circular piece of 1/16-in. bakelite
Light source and lens
Photocell and lens
Slotted disk (attached to main shaft of machine)

*Fig. 1. **Slotted disk** and photocell pick-up is used to determine starting-speed characteristic of a sewing machine.*

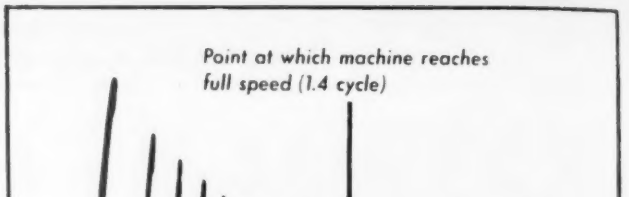


*Fig. 2. **Graphic record** of oscilloscope gives starting curve of sewing machine by a variation in amplitude.*

Machine Timing at Full Speed Done by OSCILLOGRAPH

***HIGHLIGHTS:** Cathode-ray oscillograph shows speeds, adjustments, cycle positions of any machine motions suitably connected to it—Polar-Coordinate Indicator useful in rotary motions—Timing of heddles, picker, shuttles, etc. are possible—Looms wired for test may be checked in two to three minutes.*

By MORTON SCHERAGA

Head, Market Research Dept., Allen B. Du Mont Laboratories, Clifton, N. J.

TO ILLUSTRATE the use of the cathode-ray oscillograph in the development and improvement of textile machinery, a project was set up in which it was desired to examine the starting characteristics of a high-speed sewing machine to determine the number of cycles of the motor and the time elapsed for the machine to build up to full speed. For this application a standard Du Mont Type 247 oscillograph was employed. This instrument produces on the face of the cathode-ray tube a luminous spot which traces the resulting pattern. By attaching suitable pick-up devices which convert the mechanical motion of the machine into electrical signals, the spot is made to trace out a pattern related to the machine's speed.

The simple set-up for this study is shown in Fig. 1. A circular disk with 10 slots is attached to the drive-shaft of the machine. This disk interrupts the beam from the light source to the photocell. For every complete revolution of the disk there are produced 10 pulses of light which upon hitting the photocell produce 10 pulses of electricity. These pulses are all of the same amplitude, but their frequency is proportional to the speed of the machine. To facilitate the observations, an accessory circuit is added which changes the varying frequency of the pulses into varying amplitudes. A typical starting characteristic of a high-speed sewing machine is thus illustrated by the oscillogram of Fig. 2, which shows that the number of cycles necessary for the machine to come up to full speed is 1.4 cycles. This is determined by counting 14 pulses and remembering that 10 pulses are equivalent to one rotation of the drive shaft.

Any other moving parts of any textile machine may be similarly examined with the use of suitable pick-up devices.

LOOM TIMING. To illustrate the cathode-ray oscillograph as a production tool, a project was set up to develop a method of relating the motions of the

Abstract from paper read before annual meeting of Textile Research Institute, in New York.

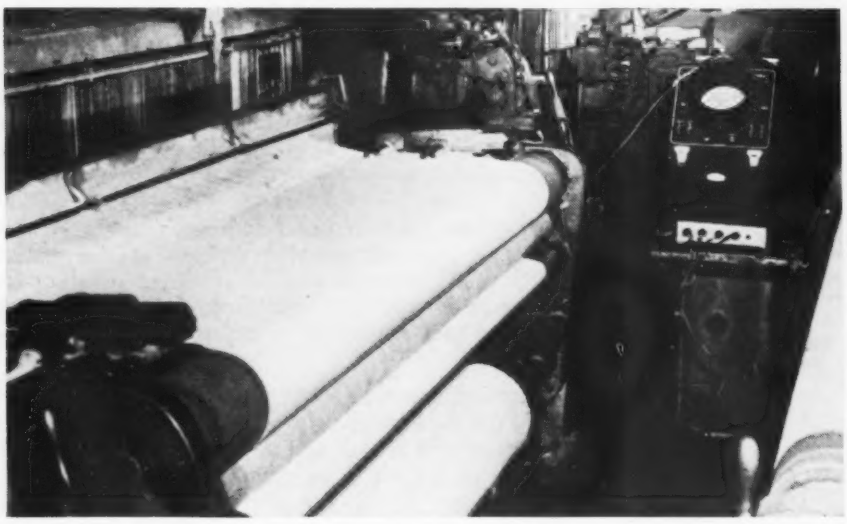


***Fig. 3. Loom is coupled** to Polar-Coordinate Indicator (at right) to permit tests made by cooperation of Forstmann Woolen Co.*

shuttle and harnesses in a loom as an aid to rapidly adjusting and timing the loom. This work was carried out with the cooperation of Forstmann Woolen Co. The present practice for timing looms is to adjust them at low speeds, using the "feel" and experience of the loomfixer. It is normally impossible, however, to ascertain whether the loom is operating correctly at high speeds, or whether a cloth woven on a loom as adjusted by one fixer will be the same as a cloth woven on another loom, adjusted either by the same or another fixer.

For this problem, the Du Mont Type 275-A Polar-Coordinate Indicator was used (shown at left in Fig. 3). This instrument produces a circle on the cathode-ray tube which rotates at exactly the same speed as the drive shaft of the loom. By applying suitable signals to the instrument from pick-ups on the loom, the exact motion of harnesses relative to the position of the shuttle can be indicated. The circle is generated by a two-phase generator attached to the drive shaft. As the machine speeds up or slows down, the circular pattern changes speed accordingly. The attachment of the two-phase generator to the flywheel of the loom under study is shown in Fig. 4.

The procedure for studying the heddle-and-shuttle motion is as follows:

Two micro-switches were mounted on the loom, mechanically arranged so that the left-hand one would be closed by one of the harness jacks in its leftmost position and the right-hand micro-switch would be closed by same harness jack in its rightmost position.

A micro-switch was also attached at each end of the loom, so positioned as to be closed by the shuttle flying past it. The left-hand micro-switch will close when the shuttle arrives at the left, and again when it is thrown from

Fig. 4. Basic tracer line on Polar-Coordinate Indicator is produced by this 2-phase generator mounted on loom fly wheel.

the left; the right-hand micro-switch likewise will close when the shuttle arrives at the right and again when it is thrown from the right. A view of the loom and the indicator is given in Fig. 3.

The oscillograms obtained with this arrangement of micro-switches are shown in Fig. 5. These three oscillograms represent different adjustments of the loom. To apply these diagrams to the adjustment of a multitude of looms in the shed, one must first determine which diagram represents the best condition. (Forstmann is now collecting data on many machines to determine which pattern should be used as a standard for all machines for each particular weave.) This standard pattern may be traced on a celluloid screen to fit over the face of the cathode-ray tube. The loomfixer then simply adjusts the machine while running at actual operating speed until the machine produces a pattern which lines up with the standard pattern.

WORK AT CLEMSON. Further work in the application of the Polar-Coordinate Indicator to control of textile machines has been done in a joint project between Du Mont and the School of Textiles of Clemson College. The program carried out by Dr. Hugh M. Brown, dean of the textile school, has shown that by designing suitable pick-up devices, any motion of textile machinery can be accurately studied. The application of such accurate equipment to textile research and production problems holds the possibilities of improved machinery, better products, and more economical operation of mills.

Quoted below are some of the results outlined by Dr. Brown in a preliminary report on his work.

"With the Polar-Coordinate Indicator, we have been able to check timing of the shedding, picking, boxing, stop motions, and shuttle speeds of looms. Our best arrangement for pick-up is a coil on a small Alnico permanent magnet, having a keeper that is opened by letting some part on the loom strike a short aluminum lever attached to this keeper. This device gives a very sharp 'pip' on the trace. The coil with its feeder may be mounted on the end of a suitable handle approximately 40 in. long so that an operator may readily reach any moving part of the loom from front or back of the row.

"As to mounting the two-phase generators, the end of the crankshaft of some looms protrudes sufficiently to give a grip for a suitably designed chuck. On others no end is exposed, but a hand wheel is so located that a spider with spring grips may be clipped across this wheel. On some looms, a hole might be bored in the

(Continued on page 188)

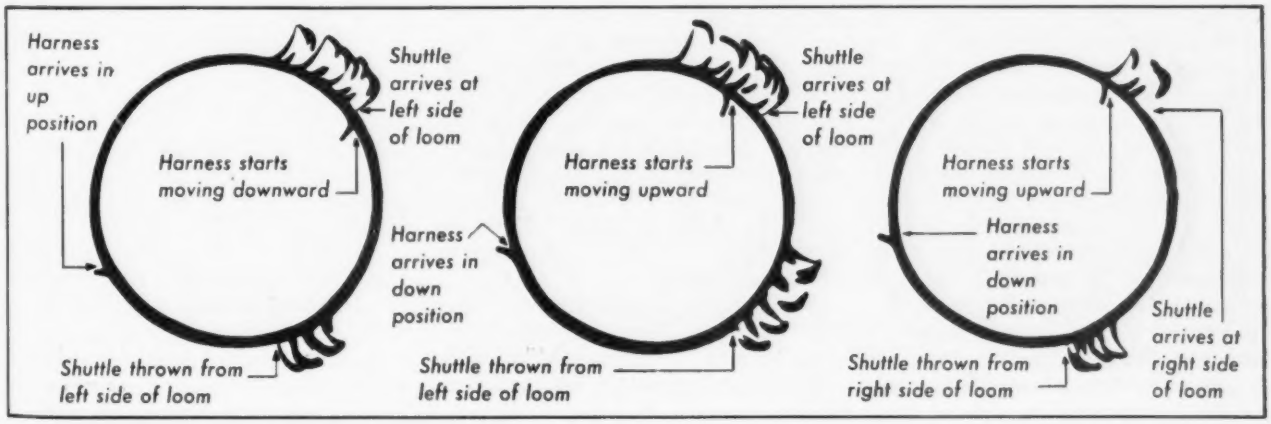

Harness arrives in up position
Shuttle arrives at left side of loom
Harness starts moving downward
Harness arrives in down position
Shuttle thrown from left side of loom
Shuttle arrives at left side of loom
Harness starts moving upward
Shuttle thrown from left side of loom
Harness starts moving upward
Harness arrives in down position
Shuttle arrives at right side of loom
Shuttle thrown from right side of loom

Fig. 5. Timing records made with set-up shown in Fig. 3. Location of the motions which are being timed are clearly shown in reference to one revolution of the loom crankshaft.

SPINNING DATA
Given by Alabama Mill Men

HIGHLIGHTS: *Reties on Barber-Colman spooler run from 15 to 25%, Alabama Textile Operating Executives report—Air-changing system maintains humidity within 1% of setting—Central-maintenance department must operate as a service unit.*

TAILINGS ON A BARBER-COLMAN spooler run from 2 to 4% of the total production, and reties run from 15 to 25%, according to information given during the discussion on spinning at the fall meeting of the Alabama Textile Operating Executives.

At Pepperell Mfg. Co., Opelika, spoolers are run at a drum speed of 1,580 r.p.m.; and 80 knots per min. are tied, it was reported. The cycle of the spooler traveler is about 3½ to 4½ min. Yardage of yarn (12s to 42s) on the bobbins varies from 3,000 to 6,300, and yarn on the spooler cheeses runs from 24,000 to 61,000 yd. Tailings at this mill were said to be about 2%.

These data were given in answer to the first of six questions on practices followed in the spinning department. For a report on the carding session of the meeting, see the December issue of TEXTILE WORLD.

The question on spooling, submitted to all Alabama mills prior to the meeting, was:

QUESTION NO. 1: *What is your standard efficiency on Barber-Colman spoolers? Please give: (1) r.p.m. of the drum, (2) knots tied per min., (3) cycle of knotter, (4) counts of yarn, (5) percent tailings, (6) yards on bobbin, (7) yards on cheese, (8) method of paying operator, (9) type of bobbin build, and (10) cleaning schedule.*

In answer to other parts of this question, it was reported that at Pepperell spooler tenders are paid by the cheese, spoolers are blown off every 4 hr., and the machines are thoroughly cleaned by a cleaner on the third shift.

The spooler drum is run at 1,230 r.p.m. at Mt. Vernon-Woodberry Mills, Tallassee, Ala., it was reported. The knotter travels in a cycle of 4.58 min. and ties 68 knots per min. Yarn counts average 10½s, and tailings average about 4%. Yards of yarn on the bobbins wound with a combination wind run about 3,969, and yarn on the cheeses runs about 19,404 yd. Spooler tenders at this mill are paid by the hour. The cleaning schedule includes a cleaning of the machine each 8 hr. of operation, a washing of the knotter with cleaning solvent once each week, and a similar washing of the traveler once each 6 months.

The spooler-drum speed at Avondale Mills, Pell City, Ala., was reported to be 1,200 r.p.m., with 92 knots per min. tied on 9½s yarn. The spoolers, cleaned with air every 3 hr., are set up to operate at a standard efficiency of 85% but operate at an actual efficiency of 92%.

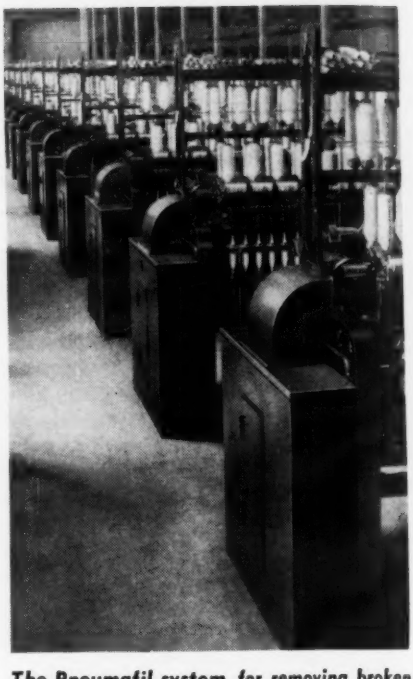
QUESTION NO. 2: *What benefits have been realized from air conditioning as regards constant humidity, temperature, even-running work, reduction of waste, cleanliness of the room, and working conditions in general?*

A constant humidity and better-running work have resulted from an air-changing system that gives 16 changes of air per hour at Fairfax mill, West Point Mfg. Co., it was reported. The spinning room of this mill is equipped with traveling overhead cleaners, and the blowing-off schedule for the frames and overhead is every other day.

Control of humidity within 1% above or below the humidity setting has been obtained at Pepperell Mfg. Co. by the installation of an air-changing system. Temperature varies somewhat more than humidity because untreated outside air is used by the system. No difference in the cleanliness of the spinning room has been noted.

This mill has one spinning room equipped with the air-changing system and one without it. Definite improvements in running conditions have been noted in the room equipped with air changing. Some experiments were made in varying the relative humidity of the room, and 55% was determined to be the most desirable condition.

More flying lint in the room and more overhead cleaning is required at Mt. Vernon-Woodberry Mills since an air-cleaning system was installed, it was reported. However, the advantages of closer control of temperature and humidity and better running conditions more than offset these slight disadvantages.



The Pneumafil system for removing broken spinning ends by air suction was reported by one mill to reduce waste, sloughs, and doublings. Disadvantages reported by the same mill were increased difficulty in creeling (because of the higher creel) and in cleaning the creel.

A 50% decrease in overhead cleaning was reported by Russell Mfg. Co., Alexander City, Ala. This mill has an air-changing system in operation with 114 spinning frames running 1 3/32- to 1 1/16-in. cotton. About 70% of the production is in dyed yarns, but no trouble has been encountered with colored lint flying over into the white-work section of the room. Humidity at this mill is also controlled within 1% up or down.

QUESTION NO. 3: *Many mills are changing over to wooden-sleeve or metal-adapter spindle to use paper bobbins, increasing the ring size and lengthening the traverse.*

a. What is your experience with these types of spindles, including the ball-bearing type that requires no base?

b. Is the straight metal adapter to be preferred to the tapered wooden or metal spindle? Which type gives the greatest assurance of maintaining the so-called suspension drive?

New-type spindles are in use on

four spinning frames at Russell Mfg. Co., it was reported. The types are: one frame of wooden-sleeve spindles, one frame of roller-bearing spindles, and two frames of metal-adapter spindles. The experience with these installations has been that the roller-bearing spindles are preferable. No trouble has been encountered in plumbing the spindles. All these frames use paper bobbins and 9-in. traverses.

Wooden-sleeve spindles have been in use at Mt. Vernon-Woodberry Mills between 5 and 6 yr., it was reported. These spindles utilize a 10-in. bobbin with a 9-in. traverse. The mill is now installing 20,000 roller-bearing spindles to use 12-in. bobbins and an 11-in. traverse. Satisfactory performance for more than 1 yr. has also been obtained from 2,000 ball-bearing spindles.

Bobbins jumping up, resulting in high bobbins and tangled yarn, has been encountered at Dwight Mfg. Co., Alabama City, Ala., it was reported. This difficulty occurred with paper tubes on one frame of wooden-sleeve spindles and two frames of metal-adapter spindles.

One cause of this trouble, it was revealed in the discussion, is defective bobbins that will not go down far enough on the spindle and will not grip the spindle securely. Paper tubes with metal rings in the bottoms were said to have some effect in avoiding the difficulty.

QUESTION NO. 4: *Discuss the advantages of a central-maintenance program.*

A central-maintenance program is in effect at Mt. Vernon-Woodberry Mills, it was indicated. Some of the advantages pointed out were: better maintenance, more complete standardization of parts, and improved lubrication. The duties of the central-maintenance crew include:

1. Maintenance of all preparatory-process machinery
2. Maintenance of humidifying equipment
3. Buying all related supplies
4. Overhauling all machinery
5. Lubricating all machinery and equipment.

The requisites for success in such a program include:

1. A progressive and cooperative management
2. A maintenance department that is able and willing to serve as a service department
3. Good supervisors.

The system was said to work as follows:

The departmental overseer is the final judge as to whether or not the central-maintenance department has done its duty. On an overseer's check card is listed the kind of machine to be repaired, the fault, the repair work done, the parts used, and the date. The overseer must sign this card before the maintenance department considers the job completed.

The signed check card is turned in to the maintenance office, and the data on the card are also listed in a large record book, which has a separate sheet for each machine in the mill. This book holds several years' record.

For convenience in locating entries signifying major installations—such as new rings or spindles—are made with red ink.

QUESTION NO. 5: *How many mills on fine yarns, meaning from 20s to 40s, are running leather top rolls and how many are running synthetic top rolls? What is the best roll covering to prevent eyebrowing?*

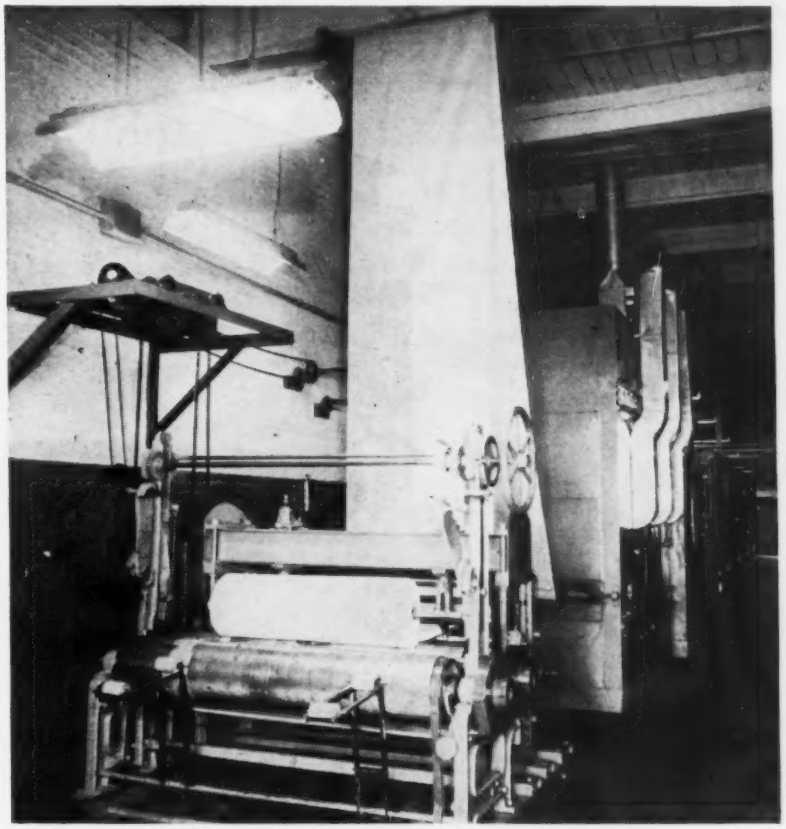
Twelve mills spinning yarns within this range of counts reported that they use synthetic top rolls. Fewer than twelve reported the use of leather rolls.

It was generally agreed that only a revolving top clearer will prevent eyebrowing.

QUESTION NO. 6: *What experience have you had with the Numo automatic spinning knock-off control and the Pneumafil waste-collection system?*

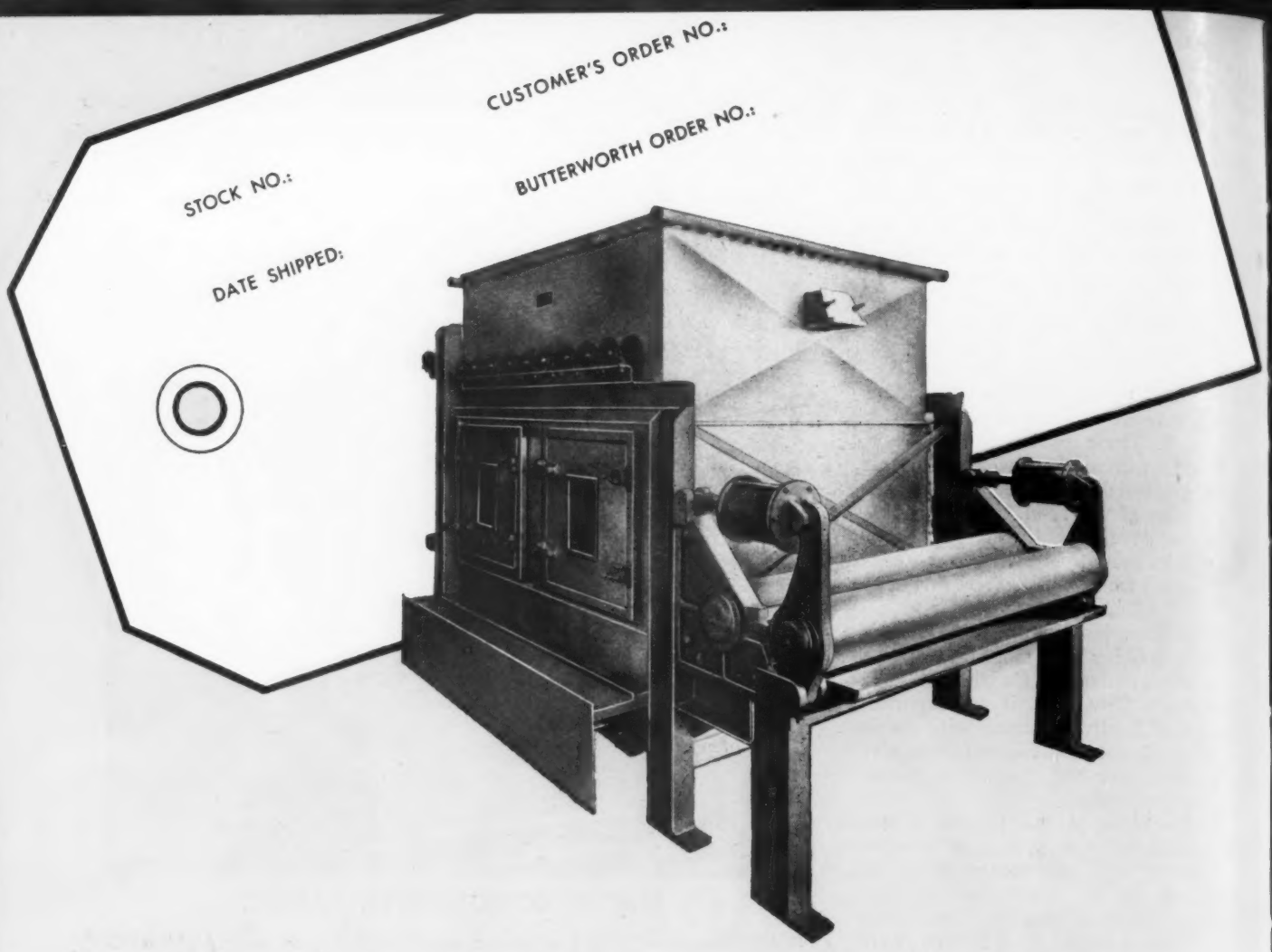
The Numo knock-off has been satisfactory at Fairfax mill, it was reported. With this installation, it is not necessary for the spinner to watch the frame to prevent a runover of the doff. The system has a hydraulic control mechanism that knocks off the frame when the doff is full and pulls down the ring rail in preparation for doffing.

Ten frames have been equipped with the Pneumafil air-suction arrangement at Mt. Vernon-Woodberry, it was reported. Advantages reported were: a reduction in the amount of waste, slough-offs, and doublings. Disadvantages reported were: an increase in the height of the creel, and the creel is harder to clean.



MAKES BONDED-WEB FABRIC

PLASTAVON MACHINE that converts cotton or rayon fiber into a bonded-web cloth in 90 sec. at Avondale Mills, Sylacauga, Ala., was perfected by Cash M. Stanley, Jr., Avondale engineer. The machine is 100 ft. long; fabric produced is 37 in. wide. Synthetic resins bond the fibers into a sheet either with or without coloring (dyeing). Uncolored product can be piece dyed or printed—it can also be used in laminates.



Vat-Dyeing Steamer Now Tagged For Stock

Because so many mill owners have said "make mine the same", the Butterworth Steamer is now being tagged for stock. This means faster delivery to you.

This machine is recognized as the "key" to the success of the Butterworth Vat Dyeing Range. The controlled action of liberated "live" steam permits speeds up to 120 yards per minute without affecting the chemical stability. This means savings up to 25% in the cost of color application.

Designed to permit easy access for threading, the Butterworth Steamer is made exclusively of non-oxidizing metal. Tensions are adjustable for various fabrics. Liquid boosters can be added to meet specific mill conditions.

Get detailed information and delivery schedules on the Butterworth Steamer. Write us today.

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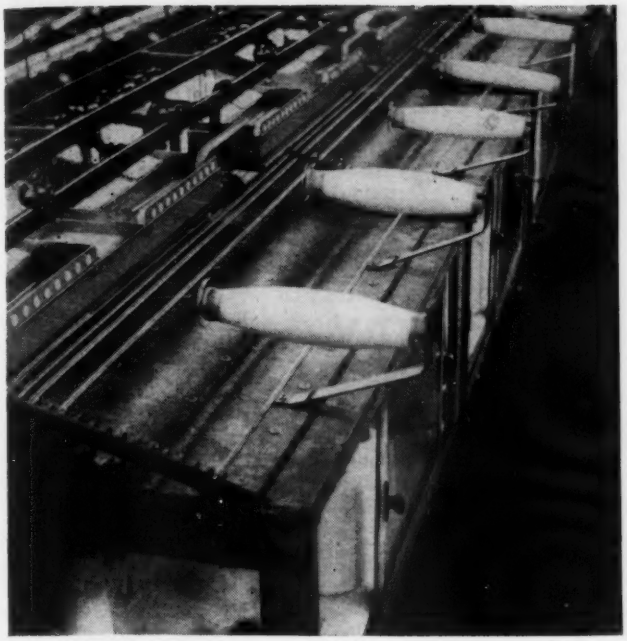
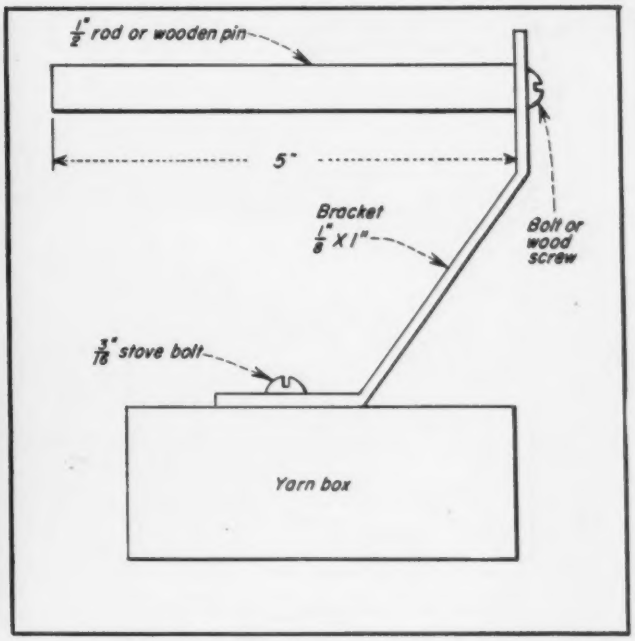




***A ring of polished wire** is used in knitting 10-den. nylon monofilament from bobbins on this 51-gage machine. The wire causes the yarn to balloon around the bobbin end so that it will not be damaged by rough places on the bobbin. The method of installing the bobbin holder is shown in the accompanying sketch.*

10- and 15-DEN. NYLON Intensifies Knitting Problems

***HIGHLIGHTS:** Ten-denier nylon yarn knits satisfactorily on a 51-gage machine at 67 courses per min.—Sinkers, dividers, needles and knocking-over bits must be in perfect condition—Better handling of yarn and stocking is required.*

By H. B. LeFEAUX
Consulting Editor, TEXTILE WORLD

PRACTICALLY ALL THE PROBLEMS encountered in knitting what, until recently, has been considered fine-denier nylon yarns are intensified when the relatively new 10- and 15-den. monofilament nylon yarns are used. There is much discussion among hosiery manufacturers in regard to these new yarns, and much experimental work is being done. So far, knitting practices have not settled down sufficiently for a definite pattern of techniques to be evolved.

Some knitters agree that sizing and twisting the yarn add much to the stocking, while others are of the opinion that knitting directly from the pirn is satisfactory. Figures from reliable sources indicate that about 85% of the full-fashioned hosiery mills in this country are knitting from the pirn.

Because 10-den. yarn is still in the experimental stage, it is difficult to determine whether or not sizing and twisting play an important part in knitting and in the finished product. It is certain, however, that the new yarn will require a somewhat slower knitting speed. In one large full-fashioned mill where considerable experimenting with 10-den. nylon has been done, it was found that a 51-gage

(*Continued on page 191*)

***No twist, size, nor oil** has been applied to the 15-den. nylon yarn being knitted on these machines. It is being knitted wet in order to produce a better selvage and reduce wear of the carrier tubes and holders. The solution used in the troughs has an oil base.*

Our Thanks TO THE TEXTILE INDUSTRY

for Voting TEXTILE WORLD Its Favorite Magazine

To Our Friends in the Mills:

TEXTILE WORLD has long been serving you, striving year after year to do a constantly better job of offering information and advice on how to step up your production rate when needed, how to make improvements in your product, how to reduce costs, how to maintain and increase your operating efficiency, and how to conduct your business affairs profitably.

You have expressed your appreciation by buying more and more subscriptions, until at this date TEXTILE WORLD's net paid circulation stands at well over 21,000 and is the highest in the history of textile publishing. We are grateful indeed.

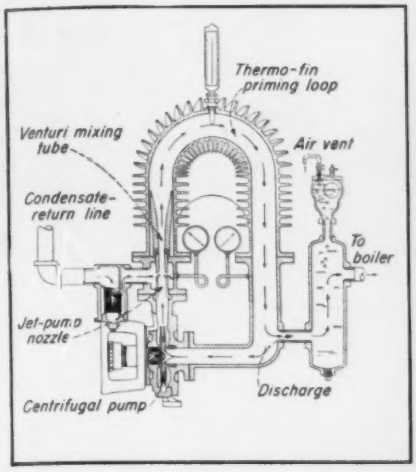
And now a new opportunity has arisen for us to thank you. A prominent research organization reports that in replying to a recent questionnaire addressed to textile-mill officials throughout the industry more of you selected TEXTILE WORLD as your preferred textile magazine than selected the next four textile magazines combined.

We take this overwhelming vote of confidence, not as something about which to grow complacent, but as evidence that, through careful study and research, we have learned a little of what is required to interest and serve you. Encouraged, we remain open as always to your unfavorable criticisms as well as your compliments, and we promise to strive earnestly to merit your long-continued approval and to help you advance the technological and economic well-being of this huge and active industry.

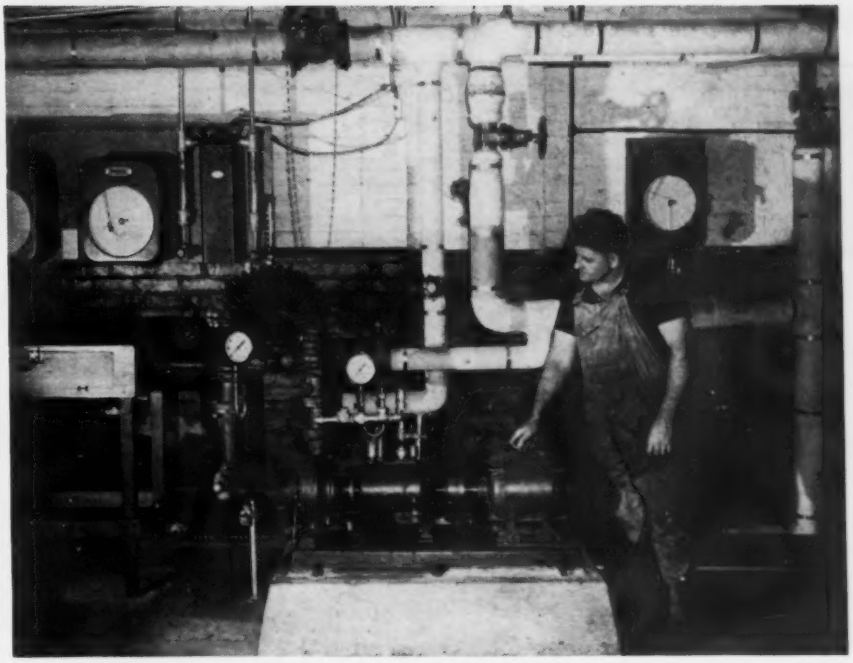
Yours sincerely,

Edwin S. Fowle

Publisher, TEXTILE WORLD



Water drawn from the thermo-fin loop is discharged at high velocity through the jet-pump nozzle. The jet strikes the returned hot condensate and induces condensate flow through the venturi-shaped mixing tube into the thermo-fin priming loop. The additional volume of condensate introduced into the constantly filled loop results in the discharge of an equal volume through the air separator into the boiler.

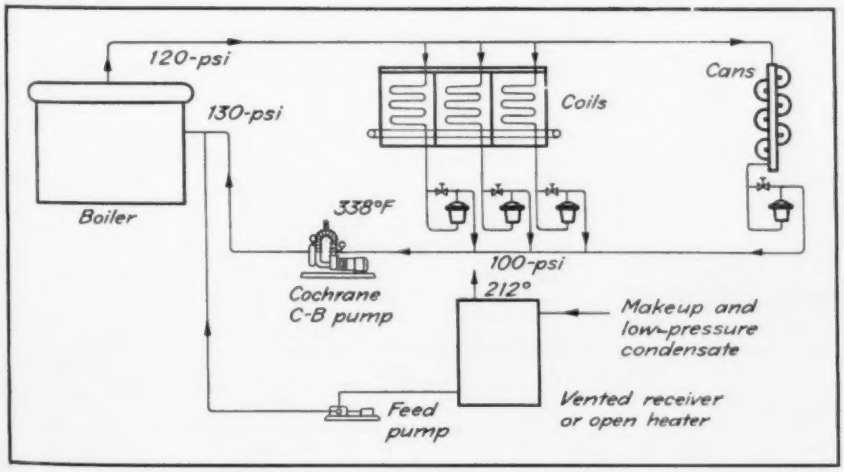


Heart of condensate-return system is this centrifugal pump and thermo-fin priming loop.

IMPROVED HEAT BALANCE
Raises Production, Saves Fuel

HIGHLIGHTS: *Installation of high-pressure condensate-return system at Rhode Island Worsted Co. increases boiler efficiency—Closed system returns condensate to boiler with little drop in temperature—About 20 tons of coal saved monthly prior to conversion to oil—Maintenance expense reduced.*

By ROBERT W. SHOEMAKER
General Manager, Rhode Island Worsted Co.
Stafford Springs, Conn.



The improved heat balance throughout this system has avoided reduction of pressure and consequent losses of heat and condensate.

REDUCED DRYING TIME, increased production, higher boiler-feedwater temperature, and increased boiler capacity have resulted from installation of a high-pressure condensate-return system at Rhode Island Worsted Co., Stafford Springs, Conn. Prior to installation of the system, considerable condensate from the dryers was lost by flashing from 100 psi. to an open receiver at atmospheric pressure. In addition to the loss of heat and condensate as low-pressure steam, flooding of the receiver resulted in loss of about 1,500 gal. per day requiring equivalent amounts of costly cold make-up water.

To insure high and uniform drying temperatures and to conserve expensive fuel, a Cochrane C-B high-pressure condensate-return system was recently installed. Traps were bypassed for simplifying the balance of the system, and the entire system was closed to avoid reduction in pressure and consequent losses of heat and condensate. Drying speeds were increased in varying amounts up to 100%, and spotty drying of printed fabrics has been completely eliminated. Production has been increased an average of 15 to 25%.

(Continued on page 194)

JUST PUBLISHED

New handbook on Air Diffusion

How to select, install and adjust diffusers for greater control of air conditioning performance

FREE to those who design, install and maintain air conditioning equipment

The new handbook contains the latest engineering data on air diffusion in general and the use of adjustable air diffusers as a positive means of eliminating drafts, hot spots, cold spots, poor humidity control, stratification, air noise, ceiling smudge and other complaints. It is profusely illustrated with photographs, sketches, charts and dimension prints for quick, accurate Selection—Application—Location—Assembly—Erection—Testing—Adjustment of Air Diffusers and of Accessory Equipment such as air equalizing grids, mounting rings and air sectorizing baffles.

Illustration from handbook showing industrial application of Kno-Draft Diffusers.

Illustration from handbook showing how Kno-Draft Adjustable Diffusers blend with interior.

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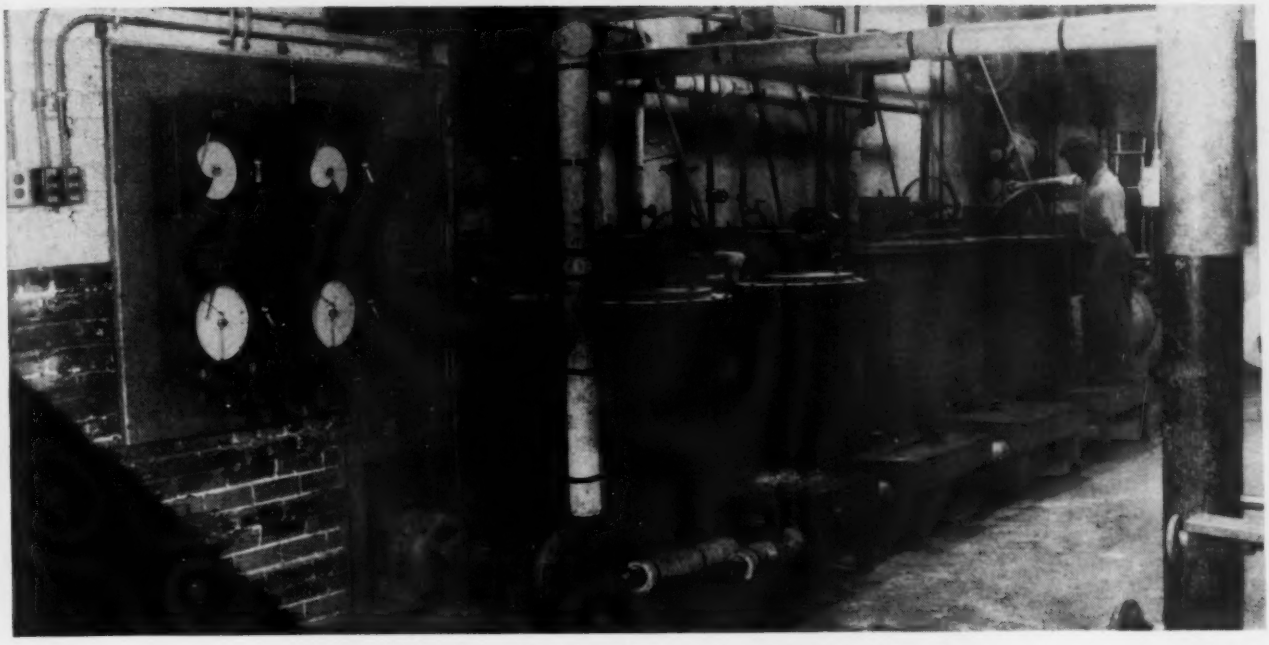

Operator studies effect of storing warp size at Patterson Mills Co.

SLASHING, WEAVING Men Hear New Phases of Old Problems

HIGHLIGHTS: *Less than ½ lb. waste per loom beam made at slasher, reported at STA meeting—New shuttle with forward eye takes 8¾-in. instead of 8-in. quill which boosts filling package 15%—Beam-dyed warps having 170 to 180 lb. of water held to 7 to 8% moisture after slashing—Successful two- to five-day storage for size solution tested.*

SOUTHERN MILLS' EXPERIENCES on varied slashing and weaving problems were reviewed by mill men at the fall meeting of the Eastern Carolina Div. of the Southern Textile Association, Durham, N. C. The problems included various coverings for squeeze rolls, the control of waste during slashing and weaving, ball-bearings for beam journals, storage of size over week-ends, changing from short to long-quill filling packages, and reduction of warp breaks by careful setting and timing of the loom.

SQUEEZE-ROLL COVERING. After scraping and cleaning its slasher squeeze-rolls, Erwin Cotton Mills coats them with white lead and covers them according to the use to be made of the rolls. The back squeeze-roll has a sheeting base and is covered on the outside by burlap which is designed to knock the size off the first squeeze roll.

The front squeeze-roll is covered with a wool blanket, but an old wool blanket is employed on this roll during the first run on the slasher, since such a blanket prevents streaking of the warp yarns. After the first run, the old blanket is removed. The rolls used were reported to vary in weight; but it was thought reasonable that the two rolls be made of the same weight so that the blankets could be used interchangeably, thus easing the problem of breaking in a new blanket.

Experience with synthetic roll covers was reported from Fieldcrest Mills, Draper, N. C., where satisfactory use and some possibility of savings in blanket cost were found on the back roll. However, it was stated that the synthetic roll when used as a front roll became grooved and required buffing or some other method of surface finishing. Since the mill had no way to buff the roll, its use on the front was believed to be limited.

SLASHER WASTE. Less than ½ lb. of waste per loom beam was reported from Patterson Mills Co., Roanoke Rapids, N. C. This excellent record of waste was attributed not so much to unusual methods of control as to persistent follow-up on defects and short or long yardage on the warper beams. The regular system of warper and beam tickets is used by the mill, but enough information is provided so that supervisors can trace the causes of waste. The slasher operator has forms upon which he marks the defects which show up while he is running the set. Low selvages, slack ends, lost ends, and other defects can be reported and traced to the warper operator and warper number responsible. The slasher operator also notes the number of yards in each beam, and, at the end of the set, the number of yards actually run out, so that further checks can be made upon the yardage warped on individual beams.

When starting a new set, the mill also runs 6 to 8 yd. without sizing before lowering the squeeze roll onto the yarn. This enables the operator to start a set with only soft waste. With new high-speed warpers, the mill reported that it was able to do this more readily, since new slashers have controls on both sides which

THE picturesque beauty of Holland's windmills is secondary to their practical use as a source of mechanical power. Today the new world has provided this "Land of the Windmills" with a means for providing new beauty through mechanical power. N. V. Kunstzijdespinnerij Nyma has now acquired rights to Industrial Rayon Corporation's Continuous Process. This brings to Holland the inch-by-inch perfection in rayon yarn that more and more foreign producers will attain through this revolutionary process for manufacturing rayon.

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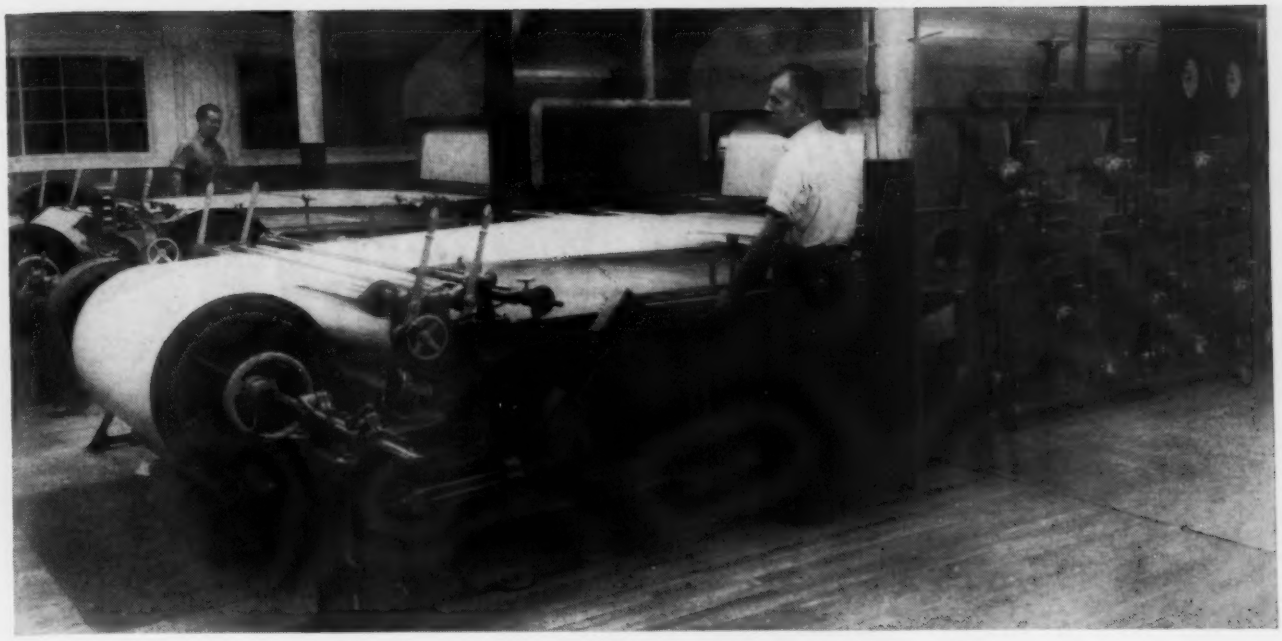


Careful handling of beams at slasher reduces waste at Patterson Mills Co.

make the task of manipulating the squeeze rolls much easier for the operator.

It was suggested that, particularly with new warpers, more waste was made at the loom than at the slasher; and the possibility of taping the ends of each loom beam with two strips of tape was advanced as one means by which mills might reduce the cut-off waste when tying the beam at the loom.

HIGH-SPEED WARPERS. While less waste was believed to be made at the slasher on beams from the newer high-speed warpers, the waste that did occur was sometimes of an unusual nature. One mill reported that drop-wires on the new warpers sometimes failed to function, and the warper continued to run with an end out. The end became "lost"; and, because of the difference in yards on that end and the other ends in the beam, some waste resulted. With new-type warpers, it was stated to be a matter of occasional variation in yards of individual ends. With old warpers, it was both a yardage variation between individual ends and between individual warper beams.

As to the cause for drop-wire failure, one mill reported that sometimes when an end broke near the warper comb, instead of falling and thus actuating the stop motion, the drop wire was held by the sweeping speed of the other ends. This was not stated to be a general problem, however.

STORAGE OF SIZE. Patterson Mills Co. reported that over-the-week-end storage of size was its general practice. After three-shift operation stopped on Saturday morning, all size was transferred from storage kettles to cooking kettles; and a special solution was added to the size to aid its storing qualities. On Monday morning, the size was reheated and returned to the storage kettles. The mill found no difference in the weaving qualities of warps sized with week-end stored size and those of warps sized with freshly-made size.

In order to determine how much size could be stored safely over the week end, the mill ran a special test on 75 gal. of size. The size was stored for one week without serious consequence. There was no souring of size, but it jelled somewhat. After this test storage, the size was thinned and pumped to the slashers and mixed with other size. Warps sized with the test solution did not weave so well as those sized with non-stored mixtures, but such warps did not weave badly.

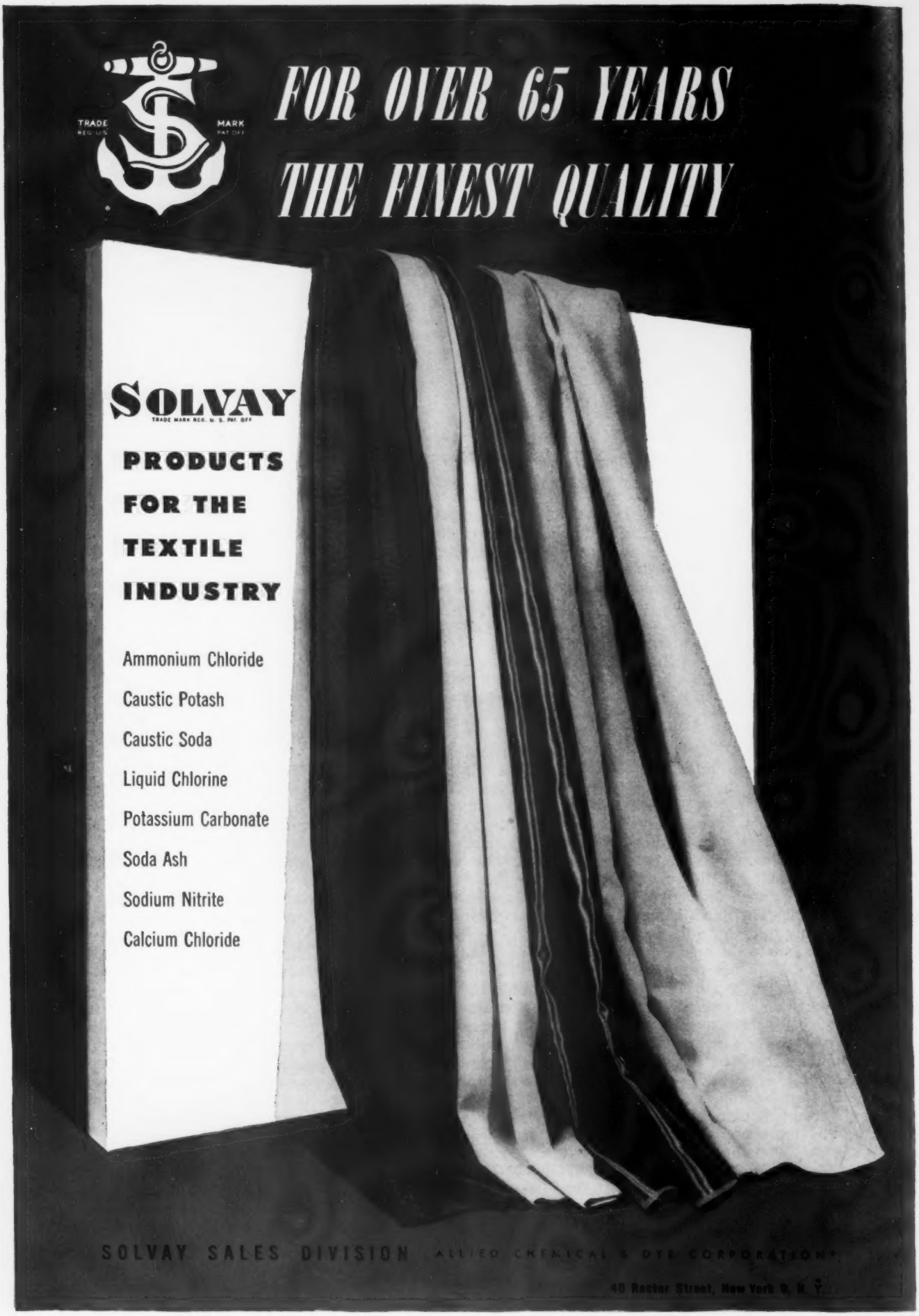
Roanoke Mills also reported a successful test on stored size. The size was left in the storage kettle and remained from Saturday morning until Monday morning at a temperature of 90° F. No appreciable difference was found in the warps made from the specially tested size and those made from the regularly prepared size.

STRETCH CONTROL. There were no reports from installations of multi-motor devices for stretch control on the slasher. However, it was pointed out that, on old-model slashers without drives for size and squeeze roll, painstaking methods sometimes were employed in order to prevent an excess of stretch in the yarn. For one thing, squeeze rolls must be of the same diameter, and operators are careful in covering the front squeeze roll to be sure there is not too much cloth on it. Stretch was believed to be influenced also by the number of ends in the beam. The more ends, the heavier the sheet of yarn; and the heavier the sheet, the more the tension required on the front of the slasher by the placing of split rods, etc., for yarn separation.

BEARINGS FOR JOURNALS. The use of ball bearings for beam journals in slasher creels was reported from three mills. All reported that weights must be placed on the beams to provide enough friction in the creel, and one reported that extra weights were placed upon wet or dyed beams. A fourth mill reported that it put the ball bearings on, then discarded them when they discovered that weight and friction still had to be placed on the beams in the slasher creel. However, another mill pointed out that the object of ball bearings for journals was prevention of jamming of the creel and saving of wear on the journals which, under the old system of applying direct weight to the beams, were subject to considerable strain and wear.

SIZING DYED WARPS. Rosemary Mfg. Co., Roanoke Rapids, N. C., sized 90 to 95% of all beam-dyed warps. After dyeing and extracting, only 40% of the water from the beams was removed, leaving 60% of the water in the beam during the slashing opera-

(*Continued on page 196*)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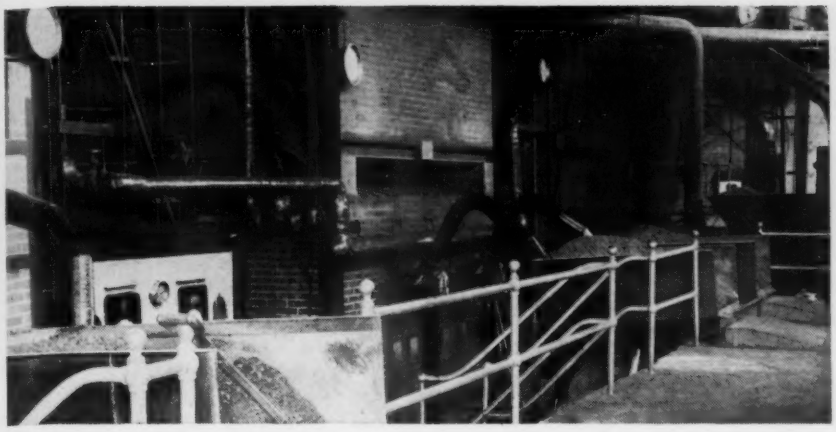
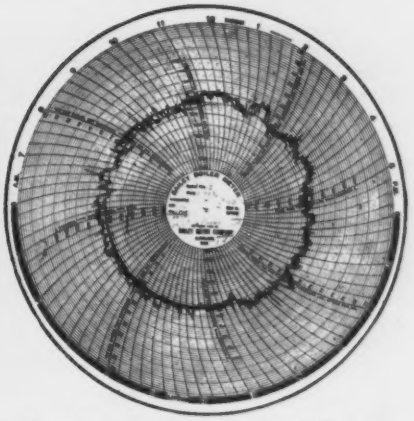


Two Sterling-type, low-speed boilers, one of 20,000- and one of 30,000-lb. per hr. capacity, and a 50,000-lb. per hr. integral-fired boiler have replaced the old-type horizontal-return, tubular boilers formerly used at Avondale Mills. Efficiency of operation is now better than 80%, as compared with 60% efficiency of the discarded equipment.



This chart, recorded by the boiler meter, indicates the number of thousand pounds of steam exhausted by the boilers per hour. During the 24-hr. period when this recording was made, 74,250 lb. of coal were used and 704,220 lb. of steam produced, or 9.4 lb. of steam per lb. of coal.

NEW BOILER ROOM
Shows High Efficiency

HIGHLIGHTS: *Three boilers with a total capacity of 100,000 lb. of steam per hour used at Avondale Mills, Sylacauga, Ala.—Operating efficiency is above 80%—Steam is produced at rate of 9.4 lb. per pound of coal.*

AN INCREASE of more than 20% in boiler-room operating efficiency has been realized at Avondale Mills, Sylacauga, Ala., by converting from horizontal-return, tubular boilers to two Sterling-type, low-head boilers and one integral-fired boiler.

Whereas the original equipment operated at approximately 60% efficiency, the new equipment is operating at better than 80%; and steam is being made at about one-half the former cost. Performance records show that approximately 9.4 lb. of steam are produced for each pound of coal used.

The three boilers, all made by Babcock & Wilcox, now in use are: one 20,000-lb. per hr., Sterling-type, low-head boiler; another of the same type but of 30,000-lb. per hr. capacity; and one integral-fired boiler of 50,000-lb. per hr. capacity. In addition to heating and supplying all the processing steam used in the five mills, the boilers also heat the office, mill-village churches, hospital, and recreation building.

PULVERIZERS. The boilers are fed with motor-driven pulverizers installed by the Fuel Efficiency Engineering Co., Birmingham, Ala. In order to obtain the maximum efficiency of the pulverizers, coal is kept covered from the time it is unloaded from the railroad car until it is dumped in the pulverizer chute. Thus, only dry coal is used.

The three boilers are of monolithic, air-cooled construction. The 50,000-lb. boiler is described as actually a steam generator, since no water or steam is stored in it but

(*Continued on page* 194)

EVAPORATIVE TEST

Furnace volume (approx.)	1,700.0 cu. ft.
Water-heating surface (approx.)	4,600.0 sq. ft.
Water wall (approx.)	900.0 sq. ft.
Steam pressure	134.7 lb.
Temperature of feed water	220.0° F.
Factor of evaporation	1.03596
Temperature of escaping gases from boiler	642.5° F.
CO_2 at boiler outlet	13.16%
Force of draft between damper and boiler	—.1511 in.
Furnace draft	—.007 in.
Wt. of coal as fired	24,300.0 lb.
Moisture in coal	6.56%
Wt. of dry coal consumed	22,708.0 lb.
Ash and refuse	5,654.0 lb.
Percent of ash and refuse	24.899
Wt. of water fed	207,240.0 lb.
Water evaporated	207,240.0 lb.
Equivalent evaporation at 212° F.	214,692.0 lb.
Dry coal consumed per hr.	3,785.7 lb.
B.t.u. released per cu. ft. furnace volume per hr	28,126.0 lb.
Water evaporated per hr. corrected for quality of steam	34,540.0 lb.
Equivalent evaporation at 212° F.	35,782.0 lb.
Per sq. ft. water-heating surface	7.779 lb.
Boiler hp. developed	1,037.0
Rated capacity	50,775.0 lb.
Rated hp.	1,471.7
Percentage of rated capacity developed	70.47
Water fed per lb. of coal fired	8.528 lb.
Water evaporated per lb. dry coal	9.126 lb.
Equivalent evaporation at 212° F. per lb. of dry coal	9.454 lb.
Equivalent evaporation at 212° F. per lb. of combustible	12.589 lb.
Calorific value of 1 lb. of dry coal	12,630.0 B.t.u.
Calorific value of 1 lb. of combustible	14,894.0 B.t.u.
Efficiency of boiler, furnace, and grate	72.64%
Efficiency of boiler and furnace	82.02%

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With equipment that moves easily and swiftly—production moves! That's why the Flex Spool Company, of Pittsfield, Massachusetts, makes jackspools entirely of magnesium, lightest of structural metals. Magnesium makes jackspools lighter—yes, by 25 per cent! And it gives them superior durability, too. Yet Flex Spool found that, because of fabrication economies and magnesium's lasting qualities, these spools cost no more over a period of time.

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Finished jackspool is sound, serviceable—and light. It is easily moved from one machine to another. Such lightness also means low shipping costs. Magnesium die cast heads eliminate fittings, and are strong and sturdy.

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Drums of resin should be stored with attention to chronological lot numbers. The first in must be the first out. Temperature of the storage chamber should be maintained at 40° F.

The stability of the resins may be checked by measuring the fluidity of the resin solution, since fluidity is an index to stability. By using a Brookfield synchro-electric viscosimeter, the test can be run in a few seconds. An electric motor drives the stirrer at constant speed, and resistance of the solution to stirring is measured by the torque of the motor.

Simple Procedure Governs CARE OF RESINS

HIGHLIGHTS: *Three-step plan followed for detecting and preventing spoilage of resin in storage—Type of resin determines effect of heat or freezing—Mills should follow manufacturer's directions closely.*

By RICHARD E. SUMNER
Manager, Textile Resin Dept., American Cyanamid Co.

THE USE OF RESINS for finishing has rapidly increased in recent years, and all indications point to vastly greater use in the years ahead. It is of considerable importance, therefore, that mills set up storage conditions and methods of handling that will prevent the deterioration of the resin products while they are in storage at the mill.

Textile plants that have used large quantities of resins are, of course, fully aware of the fact that such products cannot be stored and handled in the same way as soda ash, caustic soda, many dyestuffs, and the large number of other textile chemicals that are unaffected by storage conditions. But there is evidence that the basic procedure that should be followed is not too well known.

The procedure is indeed a simple one and is neither difficult nor expensive to put into operation. It consists of three steps, as follows:

1. Examine and test one drum of each batch of resin as soon as it reaches the plant. Chemical manufacturers generally identify their products by both batch and package numbers which are marked on each drum. If that is not now being done, it will be very simple for any purchaser to arrange for it. Similarly, any manufacturer can very readily furnish data and simple tests which will show the quality of the resin. Obviously, if any goods are found defective, the manufacturer should be notified immediately and arrangements made for disposing of the unsatisfactory material promptly.

2. Keep only a 30-day supply of resin on hand. The stock control plan of the textile plant should be set up so that, except under unusual conditions, not more than one month's supply is on hand. This, of course, can be varied to take care of special conditions, but is usually considered as optimum. Also, a very definite rule should be made that the first lot of any given resin which is put into stock should be the first one used. This will mean that the inventory is always composed of fresh material.

3. Keep all resins in cool storage, i.e., at temperatures in the range of 40° to 50° F. Some resins are far less subject to deterioration in storage than others, but practically all of them as supplied to the textile trade do have this tendency to a greater or lesser extent. None of those generally used in textile finishing will be harmed at the temperatures suggested above.

While excessive heat will quickly ruin most textile resins, freezing will also injure many of them. This is particularly true of those types which are furnished as emulsions, but manufacturers usually plainly label such products so that due precautions may be taken in their handling.

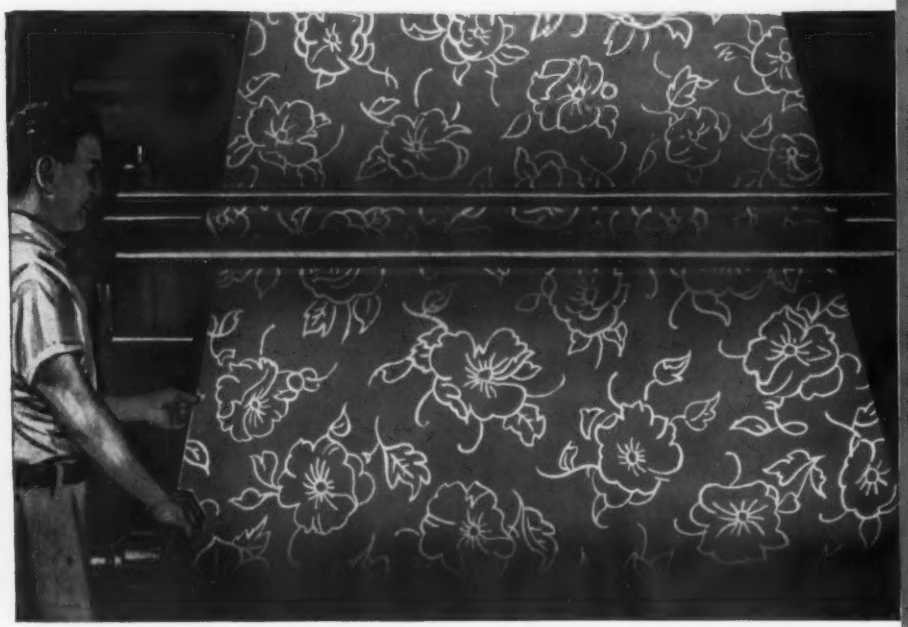
TWO CLASSES. In general, textile resins may be divided into two classifications, the thermosetting types, and the thermoplastic materials.

Some of the thermosetting types are furnished either as a dry, water-soluble material or in the form of a concentrated solution in water. They are then applied to the goods by diluting with water to the proper strength; and after they have thoroughly impregnated the fabric, are subjected to a heat treatment or cure, which converts them to a completely insoluble form on, and quite possibly within, the fiber. The chief examples of this type of resin are the water-soluble urea-formaldehyde and melamine-formaldehyde types which are generally used throughout the textile field to give crease-resistant qualities on rayon similar to those obtained by use of urea resins, and also to eliminate the felting tendencies of wool fabrics. These water-soluble products in general are not adversely affected by heat. This is because they are ac-

(*Continued on page 200*)

PROCTOR EQUIPMENT FOR THE

TEXTILE FINISHER



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a versatile dryer employing a new and different type of circulation

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Write for this New Proctor Booklet

While intelligent recommendations on the type of equipment most suitable for your particular requirements can be made only on the basis of complete knowledge of your problem—there are certain basic types of equipment engineered and built for the textile finishing plant. A profusely illustrated, 16-page booklet which tells the story of Proctor Equipment for the Textile Finisher has just come off the press. You'll find it very informative and well worth having. Write for your copy today—while the supply lasts.

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RESEARCH Now Permeates All Textile Fibers and Processes

HIGHLIGHTS: *Textile Research Institute's annual meeting brings out large and representative audience for multitude of scientific and practical reports—Insight into fiber structure, tools and methods for laboratory work, practical data from TRI studies, all are featured in well-rounded program.*

THAT TEXTILE RESEARCH is still on the up-curve of activity and expansion was evident at the annual meeting of the Textile Research Institute in New York, Nov. 13 and 14. Not only did the speakers disclose progress in numerous and diverse fields of endeavor, but exhibits by representative firms showed continuance of the instrument refinement which goes far to make textile testing and exploration constantly simpler and more accurate.

The meeting brought together over 400 executives and technicians from North and South. The first day was devoted largely to the purely scientific approach to fiber structure and behavior.

FIBER EXPLORATION. Earl E. Berkley, fiber technologist, now with National Cotton Council, discussed effects of variety and environment on the cotton fiber and emphasized that data on each are necessary in judging a given sample of cotton. W. E. Roseveare, of E. I. du Pont de Nemours & Co., told of exploration of regenerated cellulose fibers in relation to the orientation of the cellulose crystals and the amorphous portions of the fiber. He and his co-workers have developed a network theory which explains the absorption properties and the 45° transverse fracture in compression failures.

S. R. Hoover, of the Eastern Regional Research Laboratory USDA, gave data on the laboratory's work with protein fibers which suggest that molecular chains with cross linkages may be set up in such fibers under proper conditions with resulting improvement in the fiber's useful properties.

Dr. J. H. Dillon and Harris Burte presented the evolution of thought on the mechanical behavior of fibers though numerous arrangements of the dash-pot and spring elements. The newest theory (by Burte and Halsey) involves a concept of energy states with populations changing as the fiber is extended.

George B. Soule, economist and author, made several conditional statements regarding the business outlook. "If business should reduce prices as increased productivity and profits permit," he said, "we might avoid a recession for a year or two and any that came would be correspondingly milder and more quickly over. If prices rise even higher, there is likely to be a sharp recession in the near future."

H. Wickliffe Rose, of American Viscose Corp. and chairman of the board of TRI, spoke briefly of the institute's plan for advanced textile education in cooperation with Princeton University and the Textile Foundation. In 1947, three TRI fellows received degrees, two doctor's and one master's. This fall, he said, TRI has 13 fellows working at Princeton and one at University of Utah.

Dr. A. S. Hunter, technical director of the Research & Development Branch, Military Planning Div., OQ MG, told of the need for and the prospects of "The Institute of Man" which is to be set up for the study of environmental and other phases influencing military equipment and clothing.

The rise of interest in flammability of fabrics, the development of test methods, and the proposals first of state and later of federal legislation on the subject was covered by Frederic Bonnet, of American Viscose Corp. He concluded that it is still uncertain whether control will be effected by federal law or by cooperative industry-wide action.

C. E. Sparks, of E. I. du Pont de Nemours & Co., analyzed the need for fundamental research on dyeing. He described it as perhaps the broadest field for research today since virtually nothing is known on such an important matter as light fading. "Exactly how dyestuffs go on fibers and why they stay there," he said, "is far from being satisfactorily understood."

X-RAY DIFFRACTION. The function of X-rays in textile research was outlined by W. A. Sisson, of American Viscose Corp. He explained that X-ray diffraction has aided in the study of fiber structure, the arrangement of molecules, and the effect of the arrangement on fiber properties. X-ray diffraction has also improved knowledge of how various chemical or physical treatments affect fiber structure. He stressed the fact that X-rays were merely one tool in the exploration of fiber structure and properties; and that other means, such as electron microscopes, infrared-absorption apparatus, strain gages, ultrasonics, etc. were also vital to the technician in feeling and evaluating things he cannot see.

Prof. J. C. Whitwell (TRI) made a progress report on the institute's testing of electrical moisture meters. The two meters under test were the Steinlite, an a.c. instrument essentially measuring impedance; and the Hart, a d.c. instrument essentially measuring conductivity. "Preliminary results have been obtained," he said, "which allow correlation of moisture content, temperature, and instrument reading, which show that the instru-

(Continued on page 216)

WHAT PRICE RESEARCH?

In an analysis of how much a textile firm should spend on research, Andre Blumenthal, of Sidney Blumenthal & Co., reported that research budgets in American industry in 1946 ranged from 1½ to 4% of annual sales. He observed that most textile firms ranged below these figures, and that even these low figures were misleading because companies often included technical-control figures in the research budget. For fundamental research, Mr. Blumenthal recommended that a relatively fixed charge based on capital investment be allocated. Such work, he said, should neither be hastened nor slowed down, and it should continue irrespective of the business cycle because it adds to the reservoir of knowledge. Applied research has as its aim lower cost or better products; the amount spent, he said, must be flexible. Some companies, he explained, will spend up to $20,000 to eliminate one operator, which, based on three-shift operation, is approximately paid off in three years of production. He defined a successful research program as requiring careful supervision of cost of each project, constant alertness to new opportunities, and readiness to cancel a project the minute its cost appears to be out of proportion to the expected results.

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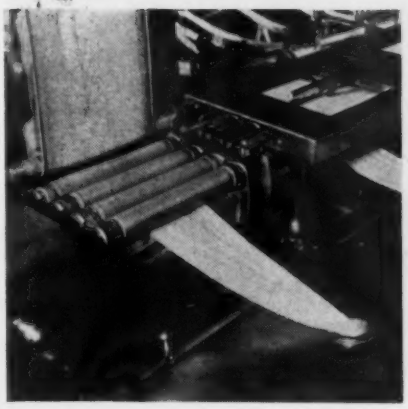


Leather, cork and synthetic roll coverings were compared for efficiency in cotton drawing at the recent STA meeting

CARDING PROBLEMS
Discussed by STA

HIGHLIGHTS: *Feed-roll reconditioning recommended for running synthetics—Warping of feed roll can be corrected—Heated rolls cause lap-ups—Power and oil saved by use of nylon bolsters—Mechanical pickers used successfully.*

CARD BEARINGS, top-roll coverings, nylon bolsters, ball-bearing top rolls, and mechanical roll pickers were spotlighted by the discussion of carding problems at the fall meeting of the Eastern Carolina Division of the Southern Textile Association held at Durham, N. C., A. R. Marley, chairman of the division and superintendent of Erwin Cotton Mills, Plant No. 1, Durham, N. C., presided.

The first carding problem discussed was the effect of worn card bearings on quality. C. R. Blakeney, manager, Industrial Engineering Co., Kenshaw, S. C., stated that many mills after switching from cotton to synthetics find the feed roll, feed-roll journals, and bearings worn. With synthetics, he reported, there is more likelihood of slippage of the lap under the feed roll. To correct this condition, Mr. Blakeney recommended reconditioning the feed rolls to correct size. He warned against changing the original size of the rolls, or using other than standard bearings or journals.

If bearings and journals are standard, according to Mr. Blakeney, a No. 5 gage can be put between the feed plate and the feed roll; although this may vary slightly with the manufacturer of the card. He reported that to repair worn journals, some mills are boring them out and renecking with a short journal provided by some manufacturer.

Mr. Blakeney recommended maintaining correct weight and not increasing it. On some cards, a bent plate creates a condition in which a No. 5 gage can be put under the ends of the roll, and a No. 4 gage in the middle. This is sometimes attributed to metal fatigue and warping. "To remedy this condition," said Mr. Blakeney, "put a piece of flat iron under the center [of the roll] and screw it on. You can screw that up and pry the feed roll up in the center so that it will gage No. 5 all the way across. On a wide card, you would probably have to use two of these flat iron pieces."

Ends-down tests made by card hands usually reveal bad feed plates, Mr. Blakeney continued. On old cards, little can be done; but in buying new cards, equipment to suit the staple and the requirements should be purchased.

LICKERIN. In reference to the lickerin, Mr. Blakeney said, "Check your shroud. Some mills I know have used a wood bearing in there for insulation, but those people are very, very expert; and I would trust their judgment almost in preference to my own. You can put some other insulation in there. Take your disk off, take off 1/32 or 1/64 of an inch, and put it back on; and it will continue to turn without any additional bearings. Some plants have equipped this with the self-lubricating bearing, which is unnecessary."

Mr. Blakeney pointed out that an examination of the flat comb will often reveal that for 2 to 6 in. on both ends the teeth are worn off. The wire is usually bent down, and the damage is on the end.

Card grinders, even when given a definite 9/1000 or 10/1000 setting all around, will often slip the comb setting—one of the most important for controlling waste percentage—back to 12/1000; Mr. Blakeney reported.

The flat-comb rocker shaft on some cards can be replaced by making a new one and setting it on the old sprocket, said Mr. Blakeney. Where this cannot be done, the shaft can be metallized and turned down.

Spring weighting on calender rolls is all right, Mr. Blakeney stated, if pressure is eliminated. Bearing wear is caused by tremendous pressures used to condense the sliver.

ROLL COVERINGS. The next subject listed was roll coverings for top rolls on drawing and fly frames. Chairman Marley asked the group, "What type of covering do you have for your drawing rolls? Has anybody tried any experiments to find out what difference you get with leather, cork, or synthetic [coverings]?"

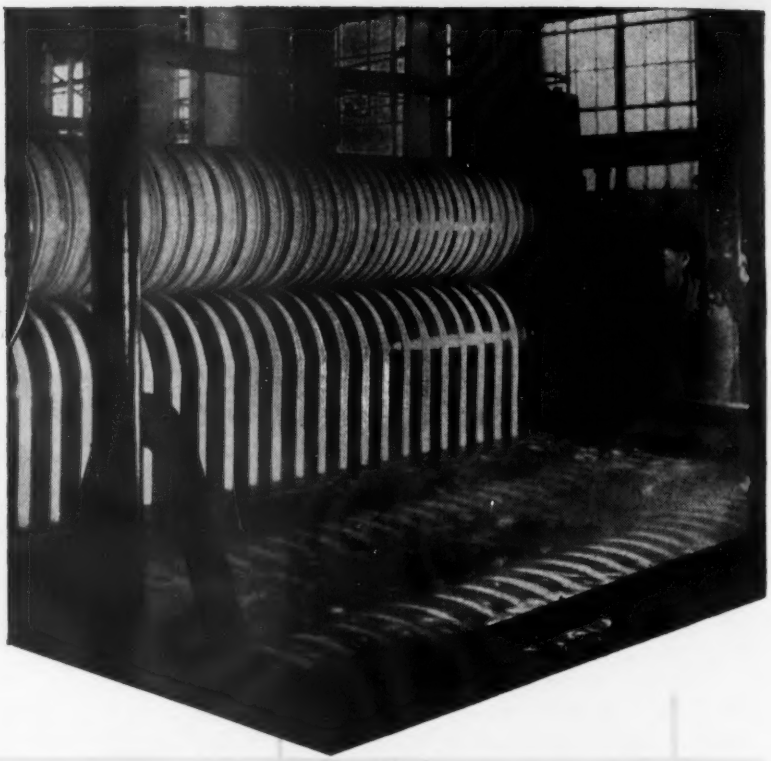
William A. J. Peacock, superintendent, Borden Mfg. Co., Goldsboro, N. C., reported use of both cork and synthetic rolls for counts from 24s to 30s. The mill has been unable to use synthetics on yarns below 20s or on short-staple cotton because of a great number of lap-ups on drawing. Mr. Peacock asked for opinions on the cause of the lap-ups.

In reply, Mr. Blakeney, Industrial Engineering Co., said, "If you do not keep the collars to normal size, you have trouble. When you use the metallic top roll, you are bothered with heat from the bearing that causes lap-ups and things like that. You recall that the roll stands are not bent in on the old type of frames. They get out of line and twist around and cause the bearings to heat; and that, in turn, causes the synthetic to get hot; and that causes the trouble. If you are using a leather roll with varnish on it, the varnish gets hot, and it begins to lap up. Whether you do it in your own shop or send your rollers to a roll shop to be recovered, cement may be allowed to get on the journals; and you may put them back on without cleaning it off. Then when you put on lubricant it gets on that cement and you have a black, gummy substance. I have seen it in plants where they stopped completely."

A. R. Marley told of a test made on a 5-roll drawing frame in which the same lap was run on both cork and synthetic rolls. The synthetic rolls were put on Aug. 5 and had not been buffed; the cork rolls were put on Oct. 5 and had not been buffed. A test run on the Saco-Lowell sliver tester

(Continued on page 202)

Dyeing Assistants



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- Sodium Metasilicate
- Sodium Silicate
- Disodium Phosphate, Anhydrous
- Tetrasodium Pyrophosphate
- Trisodium Phosphate
- Sodium Sulfide
- Oxalic Acid
- Chrome Alum
- Ferric Sulfate *(Iron Copperas Nitrate)*
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AATCC Technical Papers Cover Wide Range of Subjects

HIGHLIGHTS: *Nylon dyeing affected by pH more than is fiber itself—Recent flameproofing method changes cellulose molecule—Synthetic detergent improved by salt—Fine division of dyestuff claimed as vat-acid-dyeing advantage.*

Abstracts of additional technical papers presented at the annual meeting of the American Association of Textile Chemists & Colorists are published here. For abstracts of the intersectional contest papers see TEXTILE WORLD, November, page 133. Other technical papers were presented in part in the December issue, starting on page 139.

Trends in the Evolution Of Fire-Resistant Textiles

ROBERT W. LITTLE
Ellicott Laboratories, Inc.

The majority of flameproofing compounds consist of water-soluble salts or mixtures which fall into the category of temporary or transient treatments. The temporary, water-soluble treatments possess the advantages that they are easily applied, are extremely effective at relatively low add-ons, and do not greatly affect the desirable physical characteristics of the fabric, such as hand and color. The flame-resistant properties are purely temporary, however; any exposure to water completely destroys the effectiveness of the treatment. Accordingly, these materials are applied with the intention of periodic testing and reprocessing.

A great many flameproofing compositions have been advanced for imparting more or less permanent flame resistance to fabrics. Relatively few of these, however, have proved themselves capable of practical commercial application. At present, the most common approach to permanent flameproofing is the use of pigment dispersions. The criticisms of such formulations are the high add-ons required and the corresponding effects on the physical characteristics of the fabric. On the credit side, there are many advantages. The flameproofing process leaves the fabric with its original tensile strength or may even produce a gain in strength. The treated fabrics possess the greatest resistance to wet- and dry-cleaning operations of any of the insoluble flameproofing processes. The compounds are generally very easily applied on available finishing equipment, require only normal drying temperatures, and permit very fast running speeds. Coloring pigments may be included in the formulation or, where desirable, proper compounding can result in various degrees of stiffness similar to permanent sizing effects. Finally, in the proper selection of fabrics, it is possible to turn the loading into material advantage for the finisher or converter by permitting the use of lower-count, lighter-weight materials for certain end-uses.

One process for obtaining permanent flameproofing, and the latest to be adapted to commercial operations, consists of a chemical modification of the cellulose molecule. The principal advantages of this type process are that efficient flame and glow resistance can be achieved with somewhat lower add-ons than in the case of the pigment dispersion techniques, and there is less effect on the physical characteristics of the fabric. Principal criticisms at the present time appear to be related to secondary effects of the esterification reaction. The treatment is accompanied by losses in fabric strength, the strength decrease being proportional to the permanence achieved. Also, by virtue of the nature of the retardant complex, the treated fabrics possess limited resistance to laundering operations.

Practical Experience In Vat-Acid Dyeing

J. H. HENNESSEY
General Dyestuff Corp.

In preparation for dyeing with vat acid, which is the acid-leuco compound of the vat dyestuff, two steps are necessary; first, reduction of the vat dyestuff in the normal way with caustic soda and hydrosulphate at the temperature recommended for the vat dyestuff in use; second, conversion of the sodium-leuco compound to the acid leuco by means, usually, of acetic acid.

A pH range between 4.5 and 5.5 appears to yield satisfactory results with the dyestuffs so far investigated. Of far greater importance is the use of a dispersing agent capable of maintaining a fine state of division in the acid-leuco compound. The dispersing agent must be added before acidifying.

The advantages derived from the use of the vat-acid method are directly traceable to the fineness of division of the dyestuff.

For package dyeing, the vat-acid method is not the essence of simplicity compared to conventional methods now in use; and, for the vast majority of shades required for package dyeing, the extra operations involved do not justify the general use of the method. The claim can be made, however, that for dyeing pale shades on single cotton yarns and on spun rayon, more even results throughout the package are obtained.

In piece-goods dyeing, a considerable amount of work has been done by the pad-jig method and by the continuous method. In the continuous method, conversion to the sodium-leuco compound has been effected in the Williams machine and also by the pad-steam process.

Many different shades have been run successfully by the pad-jig method on a variety of constructions, such as mercerized 80-square cotton piece goods, combed 3.35-yd. mercerized twill, 8.2 oz. Army suiting, 64x104 4.37-yd. mercerized sateen, and combed mercerized 2x2 broadcloth, 144x76.

Advantages derived from the use of the vat-acid process applied by the pad-jig method include better coverage of fabrics likely to show unevenness by the pigment method, due to faulty prepare; elimination of dye specks; and freedom from unevenness caused by migration of the dyestuff in batched rolls.

The vat-acid process has been proved of value in the dyeing of various types of spun-rayon fabrics. Excellent results have been obtained on blends of 80-20 spun-rayon-wool by the pad-jig method, as well as by the continuous method. Fabrics of spun rayon and wool, in which the wool content is 40%, also yield satisfactory results by the vat-acid process developed in the Williams unit as well as in the pad-jig method. For fabrics containing animal fibers, a reduction in the number of ends required to effect complete development is a distinct advantage. The continuous development of vat-acid-padded constructions composed of cotton, spun rayon, and animal fibers yields a satisfactory union between the rayon and the cotton. Excellent results have been obtained on constructions of 80-20 spun-rayon-spun-acetate, and in light shades of blends of 60-40.

Wool Piece-Goods Scouring With a Synthetic Organic Detergent

DR. O. M. MORGAN
National Aniline Div.
Allied Chemical & Dye Corp.

Many types of woolen or worsted piece goods are scoured directly as they come from the loom without any intermediate fulling operations. At this stage of manufacture, the fabrics contain emulsified mineral oils, mineral oil, or animal or vegetable oils which must be removed.

It was found that in the scouring of mineral-oil fabric, ten immersions and passages through the squeeze rolls are ade-

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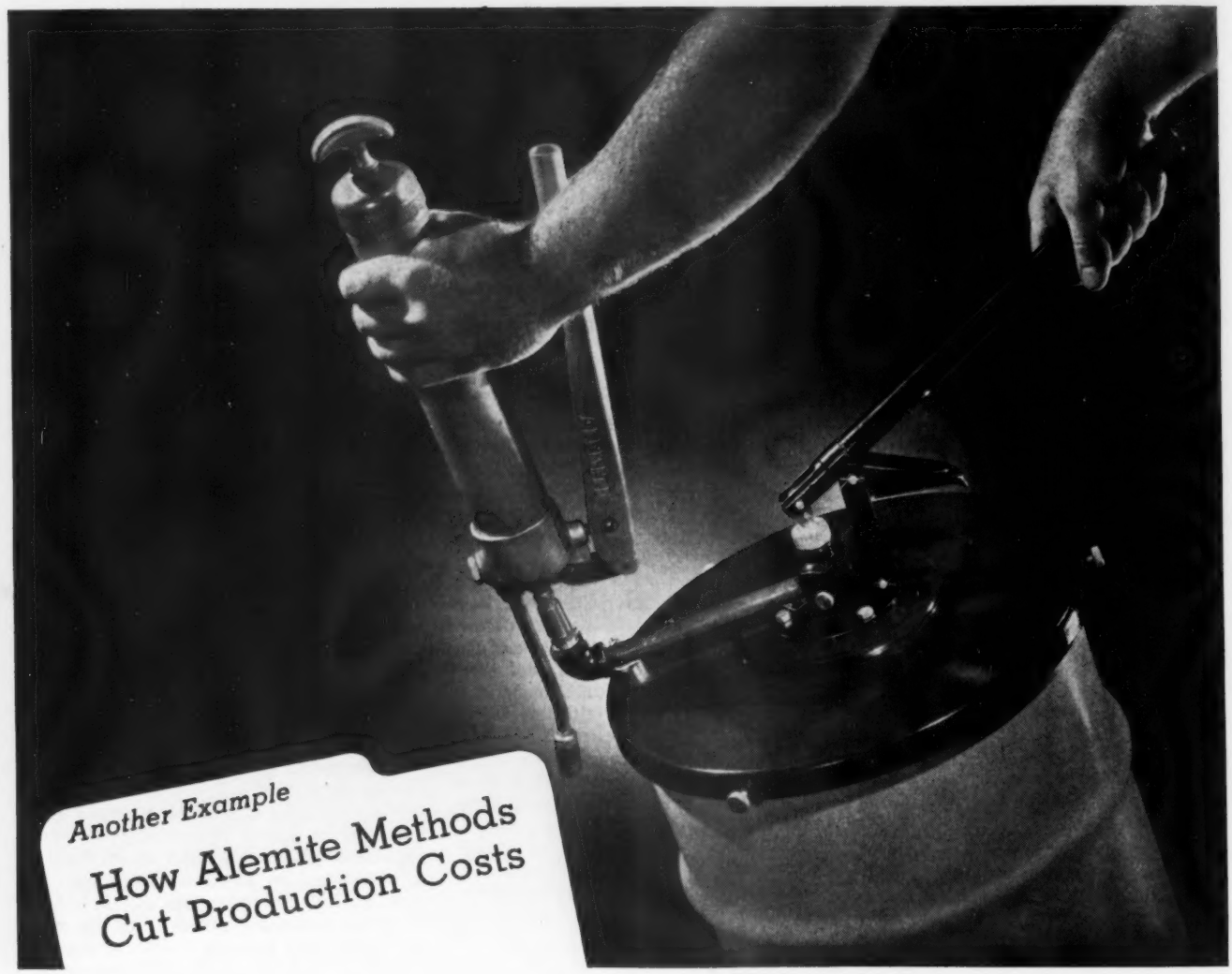

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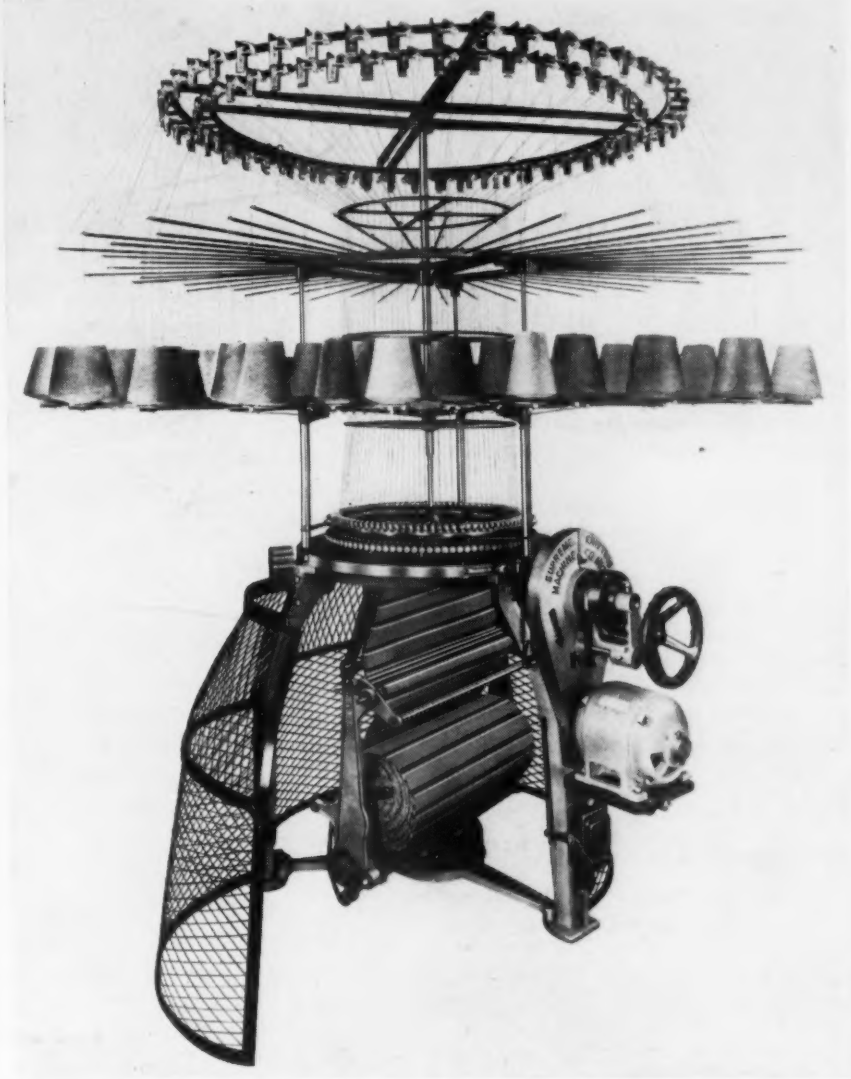
MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

TEXTILE Equipment NEWS

Circular Knitter Has 96 Feeds

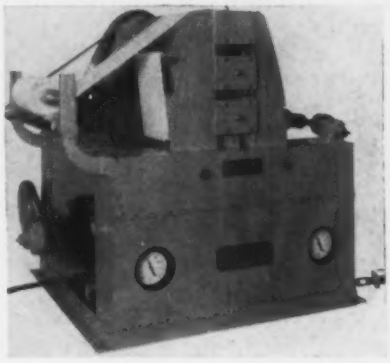
A new 26-in. diameter, 96-feed circular-knitting machine to produce wide-striped jersey at a high production rate has been announced by Supreme Knitting Machine Co., 105 Johnson Ave., Brooklyn 6, N. Y. The machine is designed to knit cotton yarns from 8/1 to 36/1 or their equivalents in wool, rayon, or silk. The unit was particularly developed for the production of wide-stripe piece goods for polo shirts and women's blouses. It is claimed that jersey with 3½-in. stripes can be produced at 125 yd. per hr.

An individual micromatic control is supplied for each cam to keep the stitch uniform for each of the 96 feeds. The operator adjusts the stitch by turning the indicator dial on each section by hand. When all dials are set on the same number, the stitch should be uniform. An interwinding "floating take-up" is said to keep uniform tension between knitting elements and take-up at all times. The cloth roll-up is roller-bearing supported. The yarn stand is stationary; only the cylinder and take-up revolve. Other features include: interlocking-cam raceway of hardened-steel cams, inserted-wall cylinder, patented multi-disk clutch, and automatic-idling hand wheels.



A new circular knitter with 96 feeds on a 26-in. diameter is claimed to be the first circular machine with so many feeds in such a diameter. (Supreme)

Laboratory Padder Aids Dyeing Tests



Color matching, formula testing, and other laboratory operations may be carried out on this laboratory pad without tying up production machinery. (Butterworth)

A 3-roll laboratory padder which is said to have every facility of a large dyehouse padder has been developed by H. W. Butterworth & Sons Co., 2417 E. York St., Philadelphia 25, Pa. The padder may be used for testing formulas and color matching without the cost of processing a large lot and without tying up production machines. A variable-speed-motor drive permits processing at speeds from 7½ to 15 yd. per min. The machine has a stainless-steel box and stainless-steel immersion rods. The box is sectionalized to permit variation in chemicals and operation, and a third box is furnished in front of the nip to allow special pad operations. Pressure can be adjusted and controlled to each air cylinder.

Sonic Method Determines Elastic Modulus of Textiles

A new automatic instrument for determination of the elastic properties of fibers, yarns, and fabric by sonic means has been developed, according to Magnetic Amplifier Corp., 4 Gordon St., Waltham, Mass., producers and sellers of the instrument. The instrument, it is claimed, makes available a highly sensitive and quantitative measure of the behavior of materials under vari-

***The pulse technique** is used in this instrument to measure fiber, yarn, fabric properties. (Magnetic)*

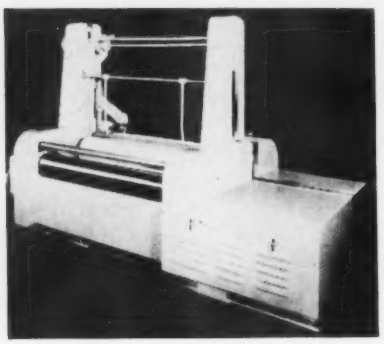
ous conditions of load, i.e., magnitude and duration of load, cyclic loading and unloading, etc. Wide application has already been made in studies of the influence of yarn geometry on the translation of fiber properties into textile structures, according to the manufacturer.

The new instrument makes the sonic method of determining elastic modulus a practical tool. By the use of the pulse technique, the velocity of sound and the modulus of elasticity are determined in fifty-millionths of a second, it is claimed. The instrument then records its findings automatically and repeats its cycle of operation about two hundred times each second. Thus, it is reported, a smooth curve is recorded, providing a record of changes in the material being tested as loads are applied, or as a program of elongation is in progress, etc. The operator is required only to set the machine in operation. Under normal conditions, no further attention need be given while the machine develops its automatic record during the tests of a material. A continuous record of elastic modulus is produced without interference in procedure of primary testing.

The pulse technique is applied in the instrument in such a way as to remove completely any "end effects" and "phase shifts," the manufacturer states. The result is said to be greater accuracy than could be obtained by the previous continuous-wave methods which were particularly susceptible to these difficulties.

The meter contains not only the necessary apparatus to measure time of propagation of a pulse, but contains also its own calibration equipment. A primary crystal-controlled time standard is built into the instrument so that it is calibrated without recourse to any other devices.

Cloth Winder Has Streamlined Cover



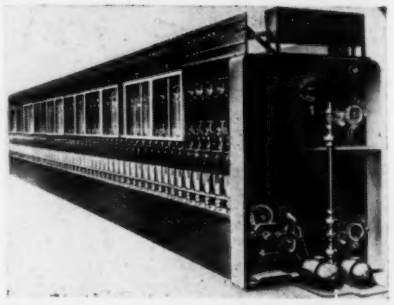
An improved cut-off winder with an optional streamlined steel cover has pneumatic cut-off and automatic slitter. (Butterworth)

An improved Simpson cloth cut-off winder has been announced by H. W. Butterworth & Sons Co., 2417 E. York St., Philadelphia 25, Pa. The new machine is said to be fully automatic, having a pneumatic cut-off and an automatic slitter. The cloth can be cut and the next roll begun all in one automatic operation.

An optional streamlined steel cover lends to the appearance of the machine, protects working parts from dirt and foreign matter, and protects workers from moving parts. The cover is designed for quick removal when adjustment or cleaning becomes necessary. The machine is equipped with individual motor drive and has centrally controlled lubrication. Use of the cover is an initial step in a Butterworth program to improve the appearance of its textile equipment through "appearance designing."

Rayon Spun and Packaged Continuously

A new continuous rayon-spinning machine, based on what is known as the "Nelson" process, has been announced by Dobson & Barlow Ltd., Bradley Ford, Bolton, England. The machine has two sides designated respectively as the "wet side" and the "dry side." Spinning by a viscose-type process is accomplished on the "wet side"; the yarn passes upward to a



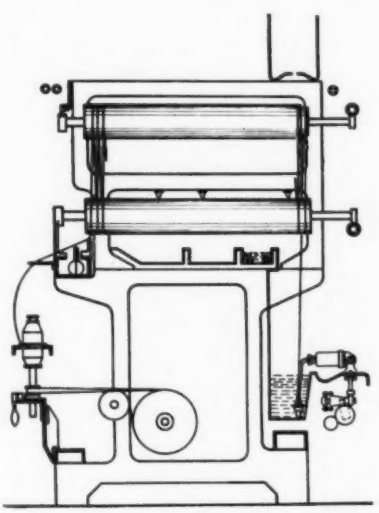
The aftertreating section of the "Nelson" machine is glass-enclosed on both sides. (Dobson & Barlow)

washing and drying process, then downward on the "dry side" to a vertical spindle and bobbin where it is packaged. Filaments as small as 1¼ den. can be spun without difficulty, it is claimed. The process is best suited for yarns of 150 den. or less with filaments of not over 4 den., according to the manufacturer; though yarns up to 450 den., with 5- to 6-den. filaments, can be spun.

Yarns may be produced to a specified strength and extensibility, it is claimed. In the field of stretch-spun yarns, a dry tenacity up to 2.0 g.p.d. with an extensibility of 20% is reported obtained with a standard coagulating bath, without use of a hot-water stretch.

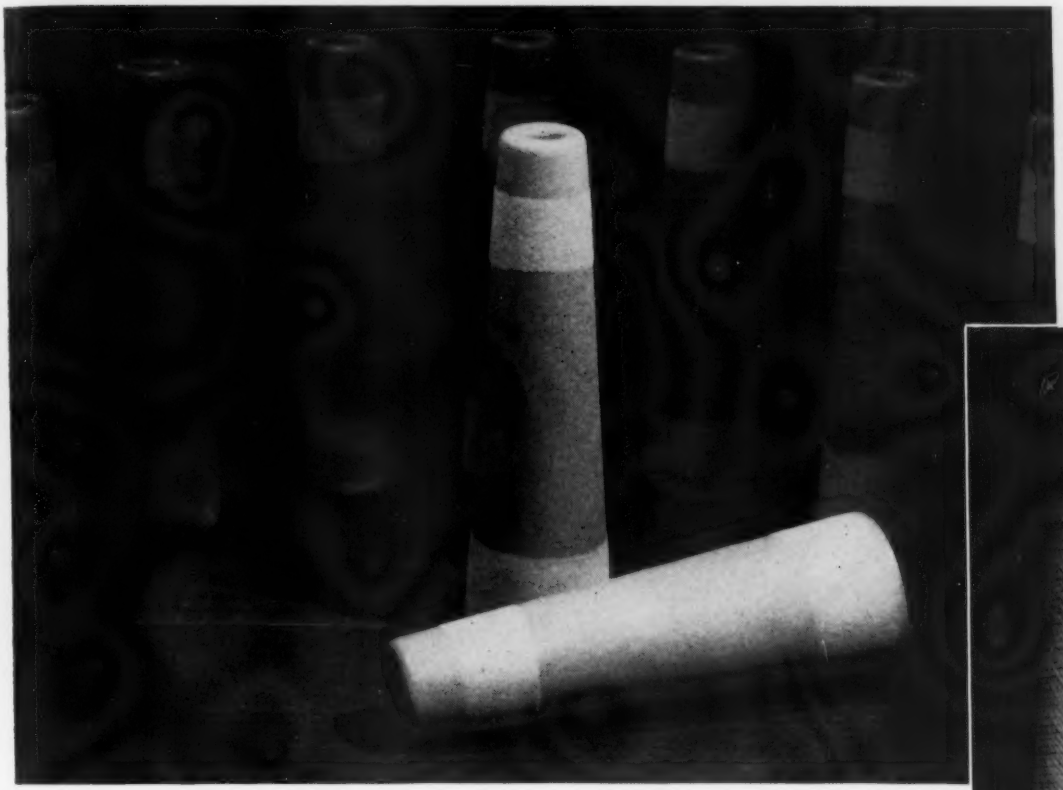
While production rate depends on many factors, the manufacturer states that rayon yarn with a filament denier of less than two is being commercially spun at 71 yd. per min.; and yarn with filaments between 2 and 4 den., at 75 to 80 yd. per min. Power consumption is reported at about 3.2 kwh. per lb. of 150-den. yarn, and water is used at the rate of 15 gal. per lb. Yarn produced is not desulphurized.

The yarn emerging from the spinnerets emerges vertically from the sur-

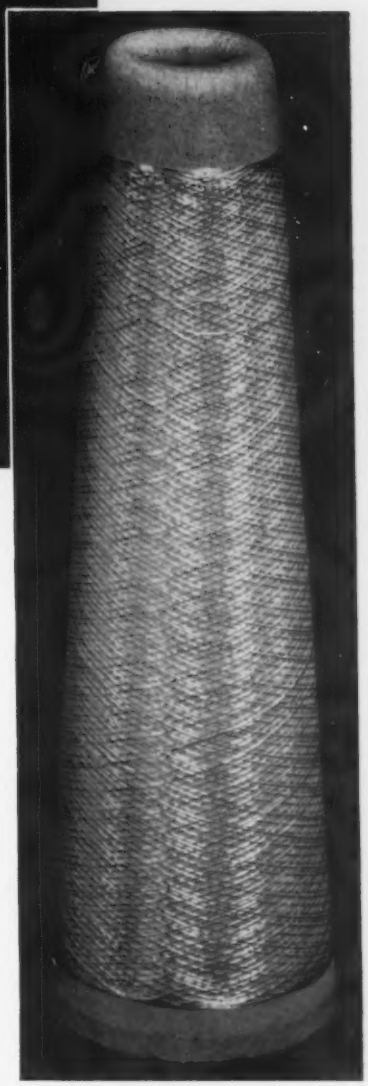


Rayon spun on one side of the machine is treated in the center section and packaged on the other side.

49 YEARS OF PERFECTING ONE THING



Latest improvement —Smooth Surface Cone banded with flock finish.



This year is SONOCO'S 49th. Since 1899, when the first hand-made SONOCO cone was produced, this company has continuously worked to improve its products and methods. From a handful of employees working by rule-of-thumb methods, the organization has grown to thousands working under modern scientific controls with precision machinery.

Result: SONOCO has not only kept abreast of progress in the Textile Industry but leads the world in the production of paper carriers.

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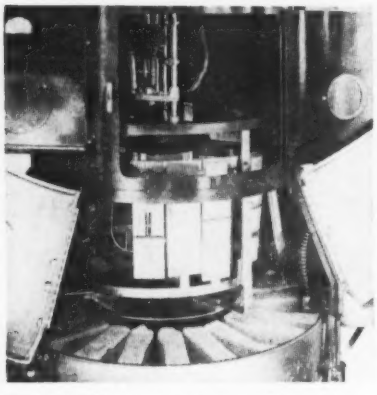
face of the bath and goes to the processing rollers. The thread passes around the two processing rollers, and is advanced by a slight, adjustable inclination of the axes toward each other. Stretch spinning is accomplished on the first convolution by passing the yarn over a step of reduced diameter on the end of the roller, causing stretch on the first downward passage of the yarn. The yarn coagulation becomes complete in the first 50 convolutions; 30 more are used for washing, followed by 30 more for drying. The yarn, during coagulation and washing, passes over Ebonite rollers, and during drying, over heated metal rollers. After leaving the drying section, the yarn passes by a wick oiling device, then onto a cap-type spinning package of 8 to 12 oz., or a ring-type package up to 3¾ lb. A spindle speed of 6,500 rpm. is recommended.

The standard Nelson unit has 49 spindles, measures 45 ft. 3 in. in overall length without motor, and is 6 ft. wide. A central fume-extraction duct with a collecting hood runs the length of the machine, and processing rollers and working parts may be fluorescent-lighted.

Modifications Aid Fade-Ometer Accuracy



Vertical alignment of swatches at a constant distance from the light source in the Fade-Ometer is claimed to result in elimination of one possible test discrepancy. (Atlas)

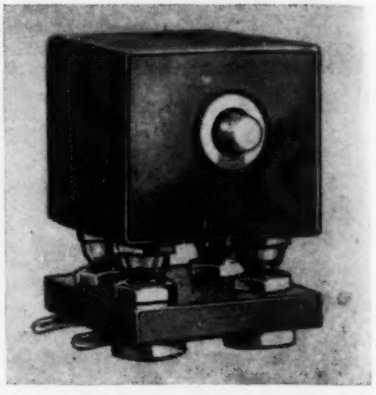
Elimination of Fade-Ometer test discrepancies due to the swinging of specimen holders is claimed for a modified swatch holder and a lower specimen-holder ring developed by Atlas Electric Devices Co., 361 W. Superior St., Chicago 10, Ill. A preliminary study revealed that differences up to 30% in the amount of fading produced were possible because of specimen holders swinging toward or away from the light source when the holders became bent through continued use or careless handling. As a result, it was decided to add a lower specimen-holder ring, and to modify the holders to engage both the upper and lower ring, thus holding the specimens in vertical alignment at the predetermined distance from the light source. The lower specimen-holder ring has a detachable section to facilitate removal of the globe when trimming the arc with new carbons. The lower ring and modified holder have been approved by the AATCC Committee on Fastness to Light. The new ring and holder will be standard equipment on all new FDA-R Fade-Ometers and can be supplied for all FDA and FDA-R Fade-Ometers now in use.

Yarn Diameter Is Measured Continuously

Continuous measurement of yarn diameter without use of contact gages is claimed as an advantage of the Diamatrol. Power unit is at the left, inspection head at the right. (Harrington)

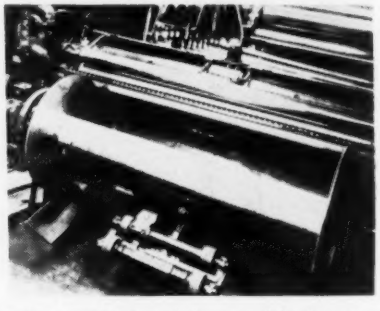
Continuous, non-contact measurement of yarn diameter is made possible by the Diamatrol, an electronic instrument developed by Harrington Engineering Co., 405 Lexington Ave., New York, N. Y. The standard model measures diameters up to 0.08 in., and special units can be supplied to measure diameters up to 1 in. An 8½-in. meter is calibrated to read full-scale deflection for plus or minus 0.0005 in., or plus or minus 0.015 in. or more, or any range in between. The reading is said not to be affected by the speed of inspection nor by horizontal or lateral displacement up to five diameters. There is no gaging pressure to distort the yarn, and an adjustable control provides electronic meter damping whereby rapid fluctuation in diameter is averaged, the manufacturer states. Connections are provided for additional meters or for recording indicators. Other controls for sounding alarms, lighting lamps, or actuating speed-control mechanisms are optional. The instrument operates on 110-v., 60-cycle, single-phase current.

Switch Breaks Both Sides of Line



A new, quickly renewable switch, designed especially for textile machinery which must stop and start continuously, has been developed by Congress Fan & Electric Co., P. O. Box 3747, Peninsula Sta., Daytona Beach, Fla. The 101 switch is non-snap type and has practically no differential. It requires only a 5-oz. pressure and a 1/16-in. movement. The switch can be used to control 2 circuits, breaking one side of the line of each; or one circuit, breaking both sides of the line. Designed for 10 amp. at 110 to 125 v. a.c., under certain conditions the switch is satisfactory at lower d.c. voltages and amperages. The housing is plastic, and has a quickly removable cover. Height of the switch with plastic mounting plate is 1¾ in., and it is 1 3/16-in. square. Travel and overtravel is 3/16 in.

Aluminum Replaces Wood In Loom-Beam Barrels



Lighter weight and lower original cost are claimed as advantages of Alcoa's new aluminum loom-beam barrel.

A new aluminum loom-beam barrel claimed to cut costs by eliminating expense of resurfacing and eventual replacement of wood-beam barrels has been announced by Aluminum Co. of America, 1463 Gulf Bldg., Pittsburgh 19, Pa.

Economy in original cost is added to the advantage of having a permanent loom-beam barrel that will withstand rough handling as well as yarn pressures, according to the manufacturer. Using the 54¼-in. beam as an example, the newly developed Alcoa section No. 34040 is said to weigh

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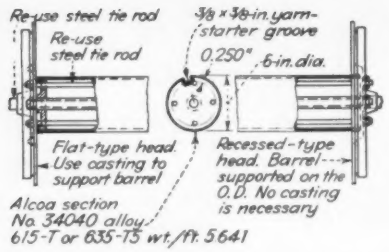

Re-use steel tie rod
Re-use steel tie rod
⅜ x ⅜-in. yarn-starter groove
0.250"
6-in. dia.
Flat-type head. Use casting to support barrel
Recessed-type head. Barrel supported on the O.D. No casting is necessary
Alcoa section No. 34040 alloy 615-T or 635-T5 wt./ft. 5641

***The aluminum beam barrel** can be attached directly to the cast-iron head by either of the two methods shown, or may be slipped over the turned-down wood barrel. (Alcoa)*

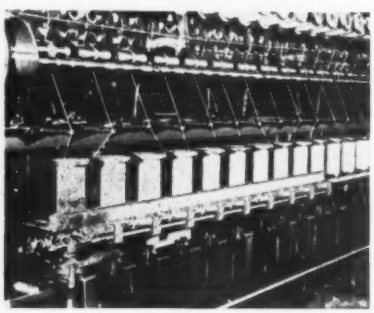
only 26½ lb. as compared to 36½ lb. for a wood barrel in the same size. The aluminum barrel is about 25% less expensive than even the cheaper wooden barrels, the manufacturer states.

The new barrel is received by the mill slightly longer than the required length and is easily finished by a lathe operation which faces the end properly. If an internal casting is used, the mill machine shop will bore the tube the length of the casting face to obtain the desired fit.

The cast-iron heads, steel tie rods, and shaft of the old beam are reused with the aluminum replacement barrel. This can be done by any one of three methods. The worn-out wood barrel can be turned down to 5½ in. outside diameter and the aluminum barrel slipped directly over it. The two other methods, illustrated in the accompanying sketch, eliminate the wood entirely and attach the aluminum replacement barrel directly to the cast-iron head. These two methods are preferable because the lightweight metal contains sufficient strength in itself, and the additional weight of the wood is eliminated.

The Alcoa replacement loom-beam barrel, an extruded tubular section with the usual longitudinal groove for starting the yarn is available in two alloys, 63S-T5 and 61S-T6. The latter is recommended for use with high-strength synthetic yarns such as acetate rayon and nylon, since its tensile strength of 45,000 psi. enables it to withstand the high collapsing pressures exerted by such yarns. Alloy 63S-T5, with a tensile strength of 30,000 psi., is well able to withstand other yarn presures. Barrels made from either alloy will take considerable abuse and rough handling when empty, it is reported.

Twister Ring Lubricated Uniformly

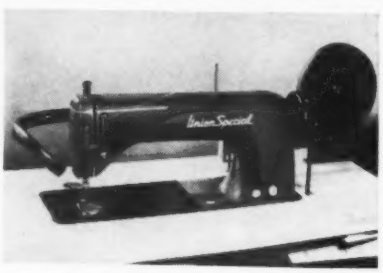


***Application of lubricant** to twister rings by this new device is claimed to be controlled, gradual, and uniform. (Lubrication Appliance)*

Controlled lubrication of twister rings and resultant greater spindle speed are claimed for an automatic ring-lubricating device developed by Lubrication Appliance Corp., P. O. Box 324, Davidson, N. C. During each stroke of the traverse, the device places a measured amount of lubricant on the face of every ring on the frame at the same time. Lubricant is applied only by the traversing movement. A reservoir in the unit holds 1 oz. of lubricant, which, according to the manufacturer, is sufficient for 100 to 600 operating hours, depending on the amount of lubricant placed on the ring. The unit can be refilled while the frame is in operation.

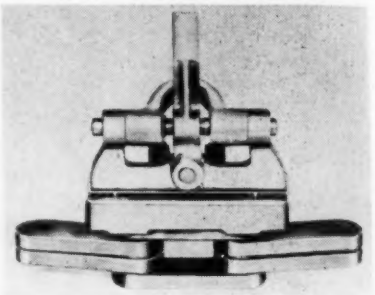
By uniform and gradual application to the face of the ring, the lubricant is spread uniformly by the traveler without being thrown off onto the bobbin, the machinery, or the floor; it is reported. Savings of 50 to 80% of lubricant are claimed for ordinary operation.

Sewing Machine Needle Cooler Announced



***The Universal needle cooler** for industrial sewing machines, consisting of a small blower with built-in motor and a mounting bracket for attaching the assembly to the table board, has been developed by Union Special Machine Co., Chicago, Ill. The air-delivery tube is detachable and is offered in several different styles to fit various types of machines. Among the benefits claimed from use of the needle cooler are thread and needle savings, increased machine speed, time saving, strong seams, and elimination of skipped stitches.*

Tenter Chain and Clamp Designed for High Speed



***High-speed tentering** without excessive wear and vibration is claimed as a result of the design of this new tenter chain. (Butterworth)*

High-speed tentering without excessive wear on the tenter chain and without extreme vibration is claimed for the new "43" tenter chain recently announced by H. W. Butterworth & Sons Co., 2417 E. York St., Philadelphia 25, Pa. The new tenter chain is designed to overcome excessive wear common to ordinary malleable-iron chains. The new chain has been under test for 6 yr., 24 hr. a day, 6 days a week; and the manufacturer reports no appreciable wear on rivets or chain wheels, no signs of wear on guides in which the chain operates, vibration practically eliminated, and reduced wear on control parts of clamp bodies.

The new chain is standard equipment on new Butterworth tenters, and may be adapted to convert other makes of tenter to high-speed operation.

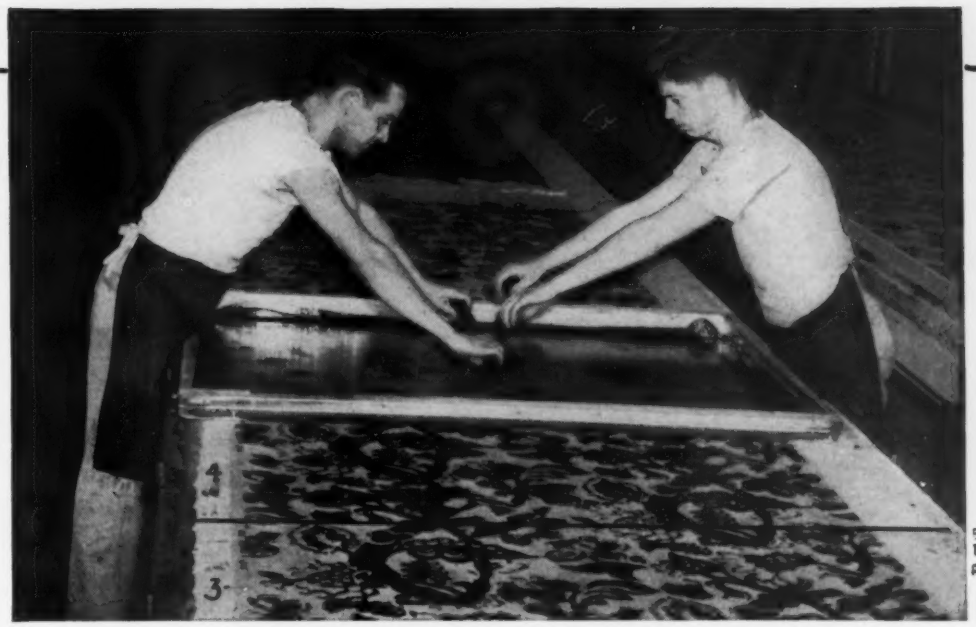
The Butterworth "43" chain is a 2-in. pitch chain instead of the 4-in. pitch usually found in the standard malleable-iron chain. This feature, it is claimed, practically eliminates the natural vibration of the chain entering and leaving the driving and idler sprockets, and minimizes impact loads and strains. The chain runs much more smoothly and quietly even at high operating speeds, the manufacturer reports; and the wear on the cloth-holding or control parts of the clamp bodies is greatly reduced. Dirt or hard iron particles cannot be picked up by the hardened surfaces of the chain. As a result, the guides or tenter rails in which the chain operates are said to give long service without wear.

When clamp bodies require replacement for any reason, the removal of a single bolt separates each clamp body from the chain. Thus repairs can be made or clamp bodies replaced without removing any part of the chain, and with only a brief stoppage of the tenter.

The stainless-steel plate is attached to the clamp body by modern high-frequency brazing equipment. When

New! Resyn*

TABLE ADHESIVE FOR SCREEN PRINTING



BARRET TEXTILE photo

Holds tightly! Releases cleanly!

NATIONAL'S quickly applied and reusable **TABLE ADHESIVE** holds unprinted cloth tightly to the screen table during the printing process. It replaces the tedious, time-consuming process of pinning.

NATIONAL'S TABLE ADHESIVE is a cold, liquid **RESYN*** adhesive that comes to you ready for use. It provides a light tack that prevents cloth slippage during printing . . . permits easy cloth removal after printing . . . and leaves the cloth clean and undamaged. In addition, it maintains a usable working tack for a period of several weeks. Ask for a trial demonstration in your plant.

National also produces: **AMBERTEX** a heavy-bodied thickener for white discharge, direct and vat color printing; **FLOTEX** to replace natural gums for printing; **FIBERTEX** for textile finishing; **NALEX** for cotton and worsted warp sizing; **FLOJEL** uniform, thin boiling corn starches in all standard fluidities; **HOOSIER** Pearl Cornstarch.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V., Veendam.

(*Reg. Trade Mark)

National ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY INDUSTRIAL USE

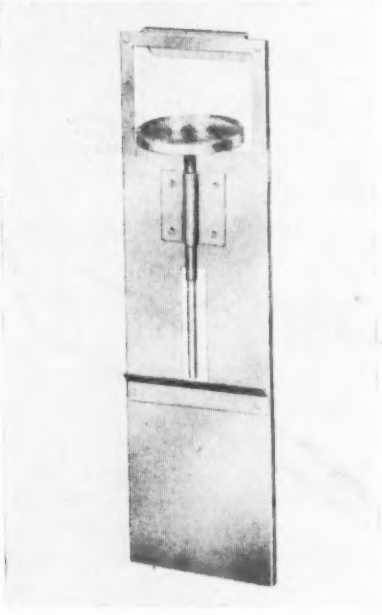
the plate becomes worn or grooved in service, it is said to be replaced cheaply and easily. No rivets are used to hold the plate in position.

The bronze nipper is equipped with a heavy-gage stainless-steel insert for finishing operations. The accurate machining and sharpening of this insert insures the accurate fitting of replacements when they are needed. The cross pins are centerless-ground to close tolerances.

The "43" clamp body is made from heat-treated processed iron, is precision-finished by modern machinery, and holds its dimensional shape and accuracy when subjected to high temperatures, according to the manufacturer.

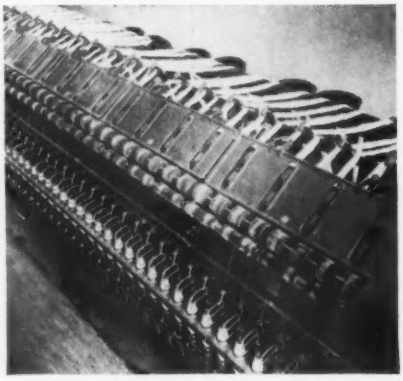
A roller-wheel control, ¾ in. in diameter, gives an average selvage grip of ¼ in. A special compound control, used largely for light rayons and silks, or shoe controls of various types for a wide range of conditions or depth of selvage grip, can also be provided.

Thermometer Checks Swatch Temperature



Observance of temperatures when testing in the Fade-Ometer is facilitated by use of a new dial-type thermometer unit recently announced by Atlas Electric Devices Co., 361 W. Superior St., Chicago 10, Ill. The unit is suspended from the specimen rack in the same manner as the standard swatch holder. When thus suspended, the sensitive portion of the thermometer measures the air temperature in a plane perpendicular to the axis of the arc. The dial registers the temperature at the face of the specimen. According to the manufacturer, the dial of the thermometer can be read easily through the inspection window without stopping the rotation of the specimen rack or opening the Fade-Ometer door. The entire unit is stainless steel, and either Fahrenheit or Centigrade scales can be supplied.

Italian Frame Spins from Sliver



Spinning of medium yarns direct from drawn sliver and drafts up to 250 are claimed for this Italian spinning frame. (Nastrofil)

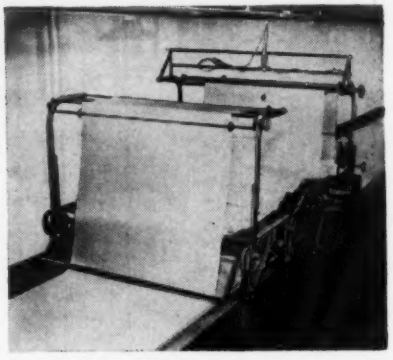
A cotton spinning frame which spins yarns directly from drawn sliver has been developed by the Nastrofil Co., Milan, Italy, according to the negotiating agency, Intercontinental Inventions Management Corp., New York, N. Y. Yarns of improved strength and less fuzzy appearance can be spun, it is claimed. Carded and drawn sliver equivalent to 0.16 hank can be spun into 32s yarn; combed sliver equivalent to 0.20-hk. roving can be spun into 40s yarn. Drafts of 200 to 250 are claimed. The machine has a movable spindle support for maintaining a constant ballooning, automatic stop and return to doffing position when bobbin is full, and a totally inclosed head which has moving parts running in an oil bath.

The ring diameter is 2 in., and the single-sided machine has 192 spindles. Lift of the spindles is 9 in. of which 7 to 8 in. is useful. The manufacturer claims that operation of the frame will produce a 50% reduction in labor, a 30% reduction in maintenance, use of 20% less power, and will give a 10% increase in production.

Material Is Laid Facing All One Way

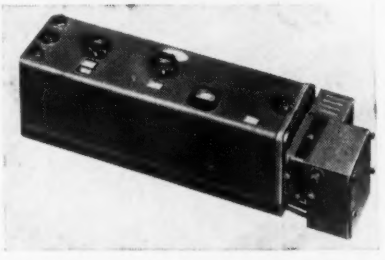
A trailer attachment for use in conjunction with the CRA Electromatic cloth spreader to lay material face one way, in both directions on the table, from two pieces of goods, has been announced by C.R.A. Corp., New York, N. Y.

Facing materials one way because of shading or pattern has long been one of the slower cloth-laying processes. Normally, the material is laid out by hand; the workers spread it down the table, retrace their steps empty handed, and then lay down another ply. With the trailer, the material is laid out going up and down the table, and there is no rethreading of the machine after each ply is cut as the goods are spread from two separate carriages. Thus, in a matter of seconds, the machine with trailer is able to go back down the table. The trailer attachment is for flat-folded materials, and can be used only with the CRA Electromatic spreader. The electric machine handles both flat-folded and rolled materials, according to the manufacturer, and lays the goods either face to face, or face one way, as required.



A trailer attachment for the CRA Electromatic cloth spreader lays material face one way, in both directions, from two pieces of goods. (C.R.A.)

Spectrophotometer Has Compact Design

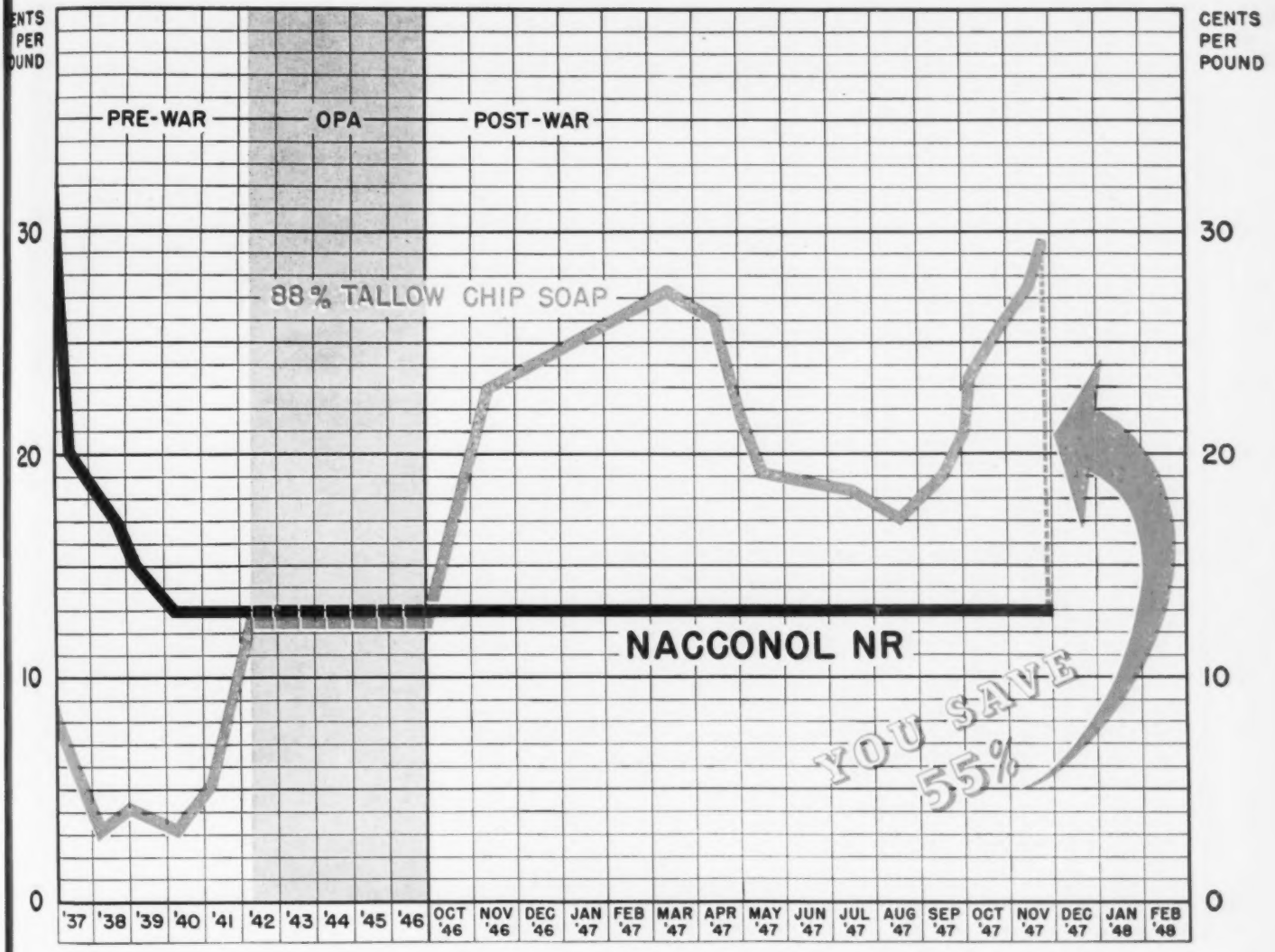


Ease of operation and accuracy in performance are claimed for this compact, new spectrophotometer. (National)

A compact spectrophotometer, guaranteed to be accurate over the spectral range from 220 to 1,000 millimicrons and calibrated from 200 to 2,000 millimicrons has been developed by National Technical Laboratories, S. Pasadena, Calif. The instrument, known as the Beckman Model DU, has two phototubes, one having maximum sensitivity in the red-infrared region, the other having maximum sensitivity in the blue-ultraviolet region. A useful current amplification of 5×10^7 is reported to permit full-scale readings in a milliammeter with as little as 2.5×10^{-8} watts of radiant energy, thus permitting slit openings to be narrowed to secure maximum resolution. Wavelength settings are

Pictures Speak Louder Than Words

COST COMPARISON - NACCONOL NR vs SOAP


CENTS PER POUND
CENTS PER POUND
PRE-WAR
OPA
POST-WAR
88% TALLOW CHIP SOAP
NACCONOL NR
YOU SAVE 55%
30
20
10
0
'37 '38 '39 '40 '41 '42 '43 '44 '45 '46 OCT '46 NOV '46 DEC '46 JAN '47 FEB '47 MAR '47 APR '47 MAY '47 JUN '47 JUL '47 AUG '47 SEP '47 OCT '47 NOV '47 DEC '47 JAN '48 FEB '48

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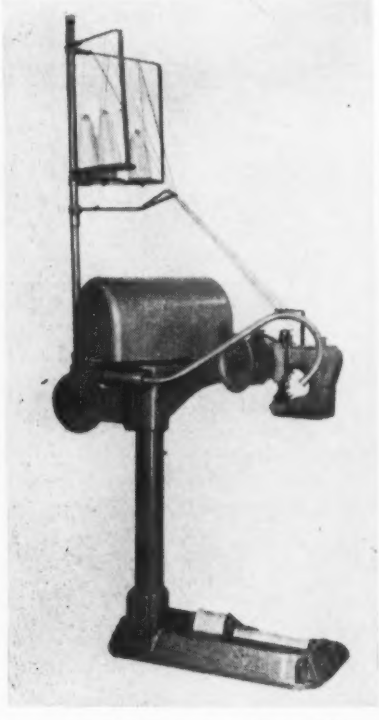
reproducible to 0.05 millimicrons in the ultraviolet and 0.5 millimicrons in the infrared. The total stray-light effect, over all but the extreme ends of the spectral range, is less than 0.1%, according to the manufacturer. Manual controls are considerably reduced by automatic controls. The wavelength scale is 1 meter long, thus eliminating the need for a vernier. The scale is calibrated directly in millimicrons thus eliminating wavelength conversion tables. A full line of interchangeable accessories is available to increase the versatility of the instrument. Over all dimensions are 30x8x9 in., the weight is 80 lb.

Felling Machine Is Pedestal-Mounted



A new pedestal-model feed-off-the-arm machine eliminates stands and tables. (Union Special)

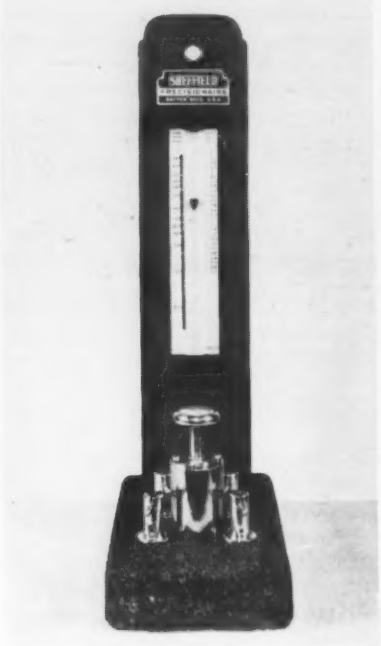
A recent development in the individual mounting of machines, a new pedestal-model feed-off-the-arm unit, has been announced by Union Special Machine Co., Chicago, Ill. Machines being built on the pedestal mount include Class 35700 feed-off-the-arm felling units for work on shirts and pajamas and Class 35800 units for heavier work, such as overall and work pants. The sewing heads are of the latest Union Special design; but, instead of mounting on a table, the frame is modified to fit on a base extending from the pedestal.

The pedestal is a unit in itself enclosing the operating treadles in the base with operating rods enclosed in the column. The electrodrive is mounted on a frame at the top of the column and is enclosed. The frame that holds the motor and sewing head is adjustable horizontally and vertically to the position most suitable for the operator. The needle cooler, an integral part of this set-up, is mounted on the under side of the frame and automatically turns on when the motor is started to run the machine.

The conventional stand or table is eliminated, making work space available to the right of the operator. This also eliminates unnecessary reaching and increases efficiency. The ease of operation and comfort of the operator which are made possible contribute to greatly improved operating conditions, it is reported.

Another innovation introduced in the pedestal-mounted felling machine is the use of a taupe color, which is neutral and said to be restful on the eyes, instead of black.

Air-Flow Resistance Tests Fiber Fineness

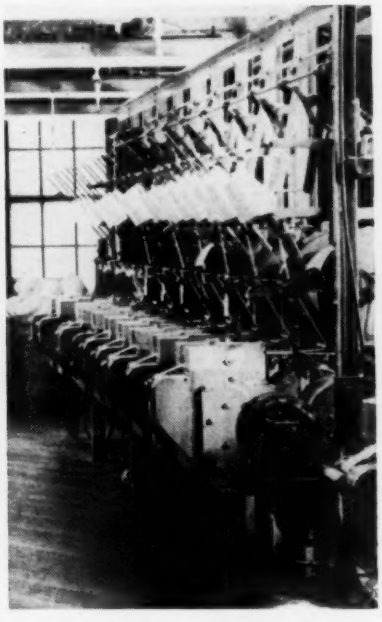


Fiber fineness is determined by resistance to the flow of air through a weighed sample of fibers in this new device. (Sheffield)

Rapid and accurate measurement of fiber fineness is claimed for the Micronaire, an instrument developed by Sheffield Corp., Dayton 1, Ohio. The Micronaire utilizes the principle of forcing air through a plug of fibers of standard weight and indicating the resistance to air flow. The air flow gives a direct reading of fiber fineness on a scale calibrated for each type of fiber. Two tests per sample can be made in 2 to 3 min.; and from 25 to 50 samples can be measured in the same time that one sample is checked by laboratory methods and equipment, the manufacturer reports. Repetitive accuracy is said to be within 0.1 micrograms per inch on cotton, and accuracy is higher with other fibers provided the sample is properly prepared.

A foot-pedal valve permits the operator to control the air supply quickly and easily. The instrument operates on a regular mill air-supply line. Moisture traps are supplied with or built into the Micronaire for disposing of condensation. No additional air-regulating or filtering equipment is required. The instrument is fully portable.

Narrow Fabric Loom Produces at 1,500 P.P.M.



Elastic webbing at 1,500 p.p.m. is produced on these looms developed at J. W. Wood Elastic Web Co. (J. W. Wood)

Twenty narrow fabric looms are producing elastic tape at a speed of 1,000 to 1,500 picks per min. at J. W. Wood Elastic Web Co., Stoughton, Mass. The loom was developed by Carl F. Libby, a member of the firm. The fabric produced has a special lockstitch selvage on each side.

At present, one operator is operating 20 looms. Experimentally, speeds over 2,000 picks per min. have been attained; and results indicate that the nature of the material being woven will be the limiting factor in determining production speed. Automatic stop motions control warp and filling and indicate when a beam change is needed. The machine is capable of

"GANG BUSTER"

QUADRAFOS* helps break up stubborn soil accumulations in a hurry.

When ganged-up soil particles cause you to dig deep into your soap and alkali barrels to get effective scouring, it's time to call on QUADRAFOS for help.

Because of its powerful deflocculating and dispersing actions, QUADRAFOS gets under and between the ganged-up particles, lifts them off surfaces, separates them and holds them in perfect suspension. Such complete soil removal not only gives you cleaner goods but also leaves them in better condition for subsequent operations.

QUADRAFOS can help you get higher quality and better profits in at least 27 textile processes. For proof, write for all the facts, using the coupon below.

softens water without precipitation...deflocculates

...redissolves precipitates...promotes free rinsing

ONLY WITH
QUADRAFOS
CAN WATER
DO SO MUCH, SO WELL

*U. S. Reg. Trade-Mark for Sodium Tetraphosphate made by Rumford

RUMFORD CHEMICAL WORKS
Technical Service Department
11 Newman Avenue
Rumford 16, Rhode Island

Please send me further information about the use of QUADRAFOS in textile wet processing. I'm particularly interested in:

- ☐ Raw wool scouring
- ☐ Piece goods scouring
- ☐ Kier boiling
- ☐ Reducing bleach requirements
- ☐ Brighter, more uniform dyeing
- ☐ Viscosity control of printing pastes
- ☐ .....

Name .....

Firm .....

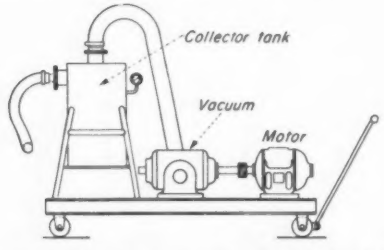
Address .....

.....

City ..... *Zone* ..... *State* .....

weaving a wide variety of light or heavy, elastic or non-elastic fabrics from ¼ to 3 in. in width. Future production of the loom will be for use of J. W. Wood Elastic Web Co. only, although licenses have been granted for manufacture of the machine in Canada and England.

Vacuum Stripper Is Completely Portable



A portable vacuum stripper is claimed to save space and power, and to handle 15 sets of woolen cards. (New England Machine)

A portable vacuum stripper, claimed to be capable of handling 15 sets of woolen cards, has been developed by New England Machine Works, 579 E. Main St., Waterbury 16, Conn. The unit consists of a rotary vacuum pump coupled directly to a 20-hp. motor mounted on a welded-steel framework adjacent to a collecting tank—all mounted on wheels for complete portability. The unit is supplied with 100 ft. of metal hose which can attach to standard vacuum-stripping attachments on the card. The pump has an automobile-type cooling and lubricating arrangement. The motor can be supplied for 220-, 440-, or 550-v. The entire unit is 10 ft. long, 32 in. wide, and 8 ft. high.

Corrosion-Resistant Pipe Is Saran-Lined

Saran-lined corrosion-resistant pipe and fittings were recently announced by the Plastics Div., Dow Chemical Co., Midland, Mich. The new product combines the rigidity and pressure strength of steel with Saran's resistance to chemicals. The pipe will satisfactorily carry corrosive sulphuric, hydrochloric, nitric, and phosphoric acids. The working temperature ranges from 0° to 190° F. Lengths up to 10 ft., in sizes from 1 to 4 in. are available. Fittings, also Saran-lined, include elbows, tees, companion and reducing flanges, and gaskets. Conventional tools may be used for cutting, threading, and assembling of joints, the company reports.

Useful Accessories for Textile Mills Appears on page 220

Dyes & Chemicals

Stabilizer Prevents Setting of Starch

FLOVIS, Glyco Products Co., Inc., Brooklyn, N. Y.

Development of an effective starch stabilizer for fluid or heavy-paste starch solutions such as those used in textile processing has been announced by Glyco Products Co. The new stabilizer, called Flovis, is added to the starch during the boiling process in amounts of from 0.5 to 2% of the weight of the starch.

Solutions made from starches to which the stabilizer has been added remain more fluid since Flovis retards "set" and prevents lumping. Even if "set" occurs, the effectiveness of the stabilizer is not lost since the "set" can be overcome readily by simple stirring.

Besides proving more effective in direct comparison with older materials, Flovis is said to be economical, since less of it must be used to achieve the desired result.

Designation of Blue Dye Changed

The designation of ANTHRACENE BLUE BRA CONC. CF, a chrome dyestuff which yields bloomy shades of navy blue on woolens and worsteds with good fastness [TW., Nov., 1947, p. 168], has been changed to CHROMINDIGEN BLUE BRA CONC. CF. The dyestuff is a product of General Dyestuff Corp., 435 Hudson St., New York 14, N. Y.

Seven New Dyes Announced by General

Announcement has been made by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y., of seven new dyes. Descriptive literature on each product is available from the manufacturer.

WOOL FAST BLUE BLA EXTRA CF—an acid dyestuff which produces bright reddish blues with good fastness to fading and seawater, and fairly good fastness to washing and light. Since the shade is not affected to any extent by chroming, the dye is well suited for shading and brightening of chrome colors. Its exhausting properties make the dye useful for mixed fabrics.

ALGOL YELLOW GCA PASTE FINE—a straight vat dye of unusual brightness of shade for dyeing yellow and bright-green shades. It is suitable for dyeing cotton, rayon, linen, and silk; and on spun-rayon-wool blends, good uniformity is reported obtained. The dye can be applied by the pigment-padding method, by package-machine dyeing, and by all conventional dyeing methods.

Fastness to washing and chlorine is very good. Light fastness of the straight yellow dye, depending on the depth of shade, is fairly good to good. In green combinations, the light fastness is very good.

In addition to the Paste Fine brand, a Double Paste fine which is twice as strong as the single paste, but otherwise the same, is available. Algol Yellow GCWF powder is a dispersed powder equal to the double paste in strength and is suitable for pigment application and package dyeing. A concentrated, undispersed yellow GCA powder is six times as strong as the single paste.

INDANTHRENE RED VIOLET RHA PASTE FINE—a finely dispersed paste standardized for printing. It is non-settling, grit-free, and has all-around desirable properties for vat printing. The paste fixes readily on cotton or rayon, and the prints possess very good fastness properties.

ACID CHROME RED BA-CF—a straight chrome dyestuff which produces exceptionally brilliant shades of bluish red, and which can be applied equally well by all chrome-dyeing methods. The resultant shades possess good fastness properties. Solubility is good; and the level-dyeing properties are sufficient to make the product suitable for application on raw stock, slubbing, yarn, and piece goods on all types of dyeing machines.

Acid chrome red BA-CF leaves effect threads of cotton, rayon, or acetate clean. It is a non-dusting powder and suitable for material which is to be rubberized.

RAPIDOGEN GOLDEN YELLOW R—a stable azoic preparation, soluble in caustic soda, which after printing and acid ageing develops in the form of an insoluble pigment possessing good fastness properties. When printed on cotton or rayon fabrics, the dye produces bright, golden yellow shades with good fastness to washing, light, and chlorine.

Rapidogen golden yellow R is applied in the same manner as other Rapidogen colors. The stability in the

(*Continued on page 204*)

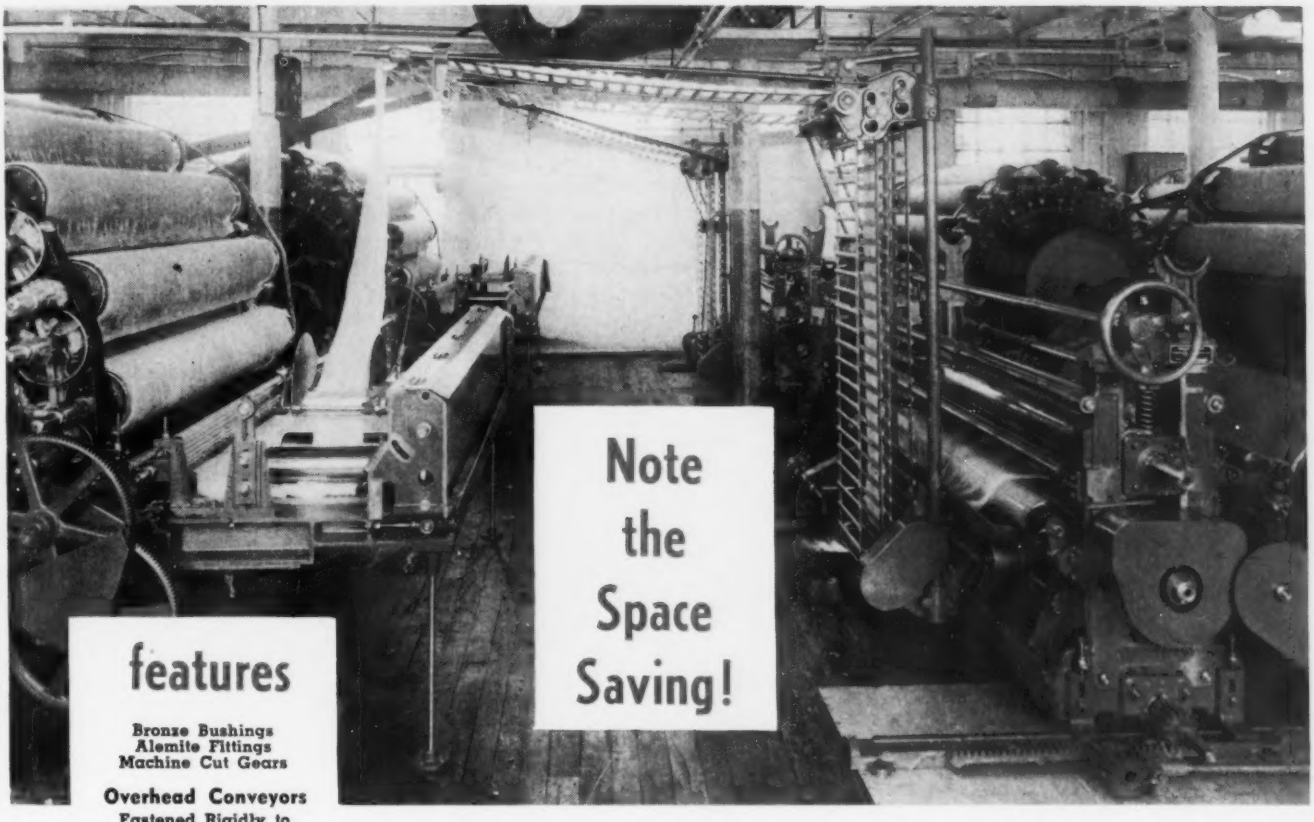
Duesberg-Bosson of America, Inc.

—manufacturers of the new

INTERMEDIATE CENTER

BROAD BAND FEED

TO FIT THEIR PATENTED PERALTA MACHINES AND EXISTING CARDS



features

Bronze Bushings
Alemite Fittings
Machine Cut Gears

Overhead Conveyors
Fastened Rigidly to Peralta
Two Vertical Supports Less Vibration
Oilless Wood Bushings
Heavy Roller Chain Drive
Jaw Clutch Aids Starting
Width of Woolen Band Adjustable—2" to 11"

Feed Table
Heavier Design
V-Belt Drive
Variable Speed Sheaves
Deeply Fluted Aluminum Rolls
Prevent Web from Sticking

● The Intermediate Center Broad Band Feed was designed by our engineers in Providence to fit the Peralta Machine. Also sold separately. Includes many improvements. Saves valuable floor space between Peralta Machine and the Feed Table.

Prices and Delivery on Request

Duesberg-Bosson of America, Inc.

351 Harris Avenue, Providence, R. I.

Round Table

FOR EXCHANGE OF IDEAS — *The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Bow in Knit Goods Avoided by Tension

This letter is written in the hope that it may help answer the question in your October issue about bow in tubular knit goods [T.W., p. 174].

Some time ago, we had considerable trouble with bow in knit goods. The fabric came off the dryers reasonably straight. The procedure from that point was to semidecate the woolens and worsteds with spreaders and to calender the cottons with spreaders. Both of these processes bowed the cloth.

The spreader used for cotton cloth has two rubber rolls on each side to take up on the sides of the cloth. These rubber rolls are held together by springs, and the tension on the springs could not be adjusted fine enough so that the take-up rolls would do a perfect job. In order to permit better adjustment of tension, we soldered a nut to one end of the spring, screwed a bolt in the nut, and made a hook of the other end of the bolt. This extension of the spring made fine adjustment of tension possible by screwing the nut along the bolt, so that we were able to maintain the ends of the rubber rolls perfectly square. In this way, we were able to drive the rolls on both sides of the spreader so that the take-up tension was equalized. The cloth could then be rolled without bowing it.

Worsted and woolen goods were semidecated without spreaders, and they finished without bow. To compensate for the required finished width, we adjusted the spreaders on the dryer. (*R-384*)

Worsted Drawing Requires Improvement

According to extensive tests conducted by an able textile-research unit, as few as 72 doublings in worsted drawing are sufficient. In the machinery used at present by most worsted mills, the actual number of fiber doublings is around 2½ million.

Worsted machinery is set up to control only the long fibers in the drawing and doubling process, and the short fibers are permitted to drift. I am of the opinion that the only way to solve the problem is to have machinery that will control both the long and short fibers without breaking them.

The type of rolls used in drafting cotton, where the short fibers are effectively controlled, should be adapted to the manufacture of woolen and worsted goods. Of course, some progress has been made toward this goal; but the improvement is long overdue, and progress is being made too slowly.

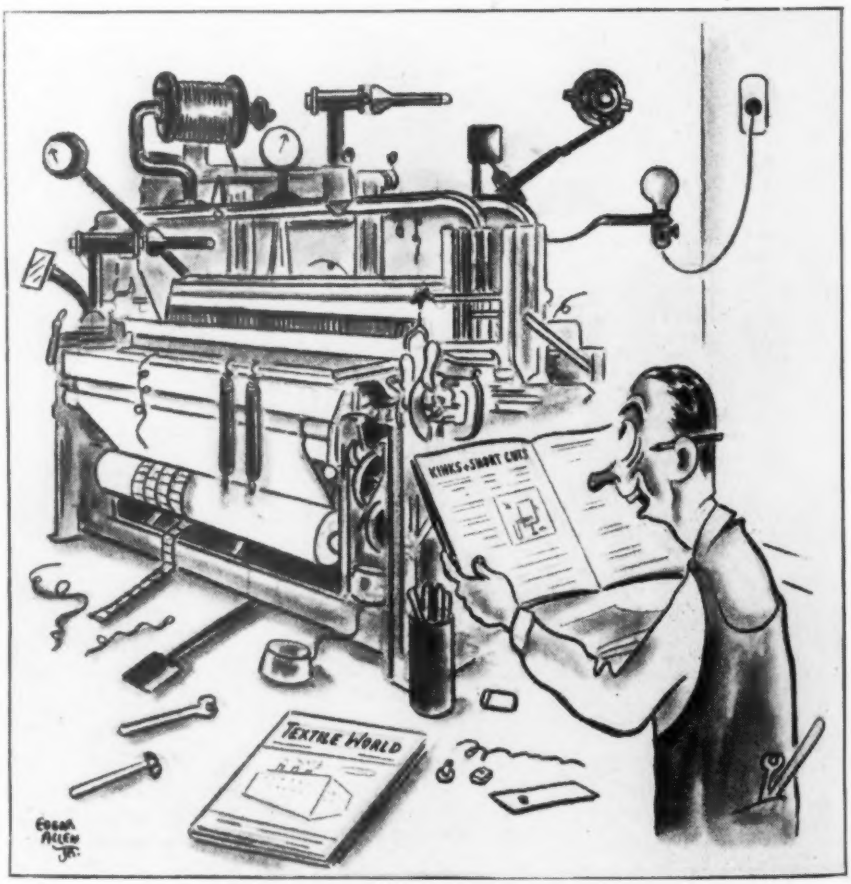
In the mill where I am employed, we are forced to use the machinery as we buy it, for we do not have the organization and equipment to adapt it in any particular way. We therefore keenly feel the lack of the improvements that should be made. (*R-388*)

Air in Conveyor Lines Needs Periodic Checking

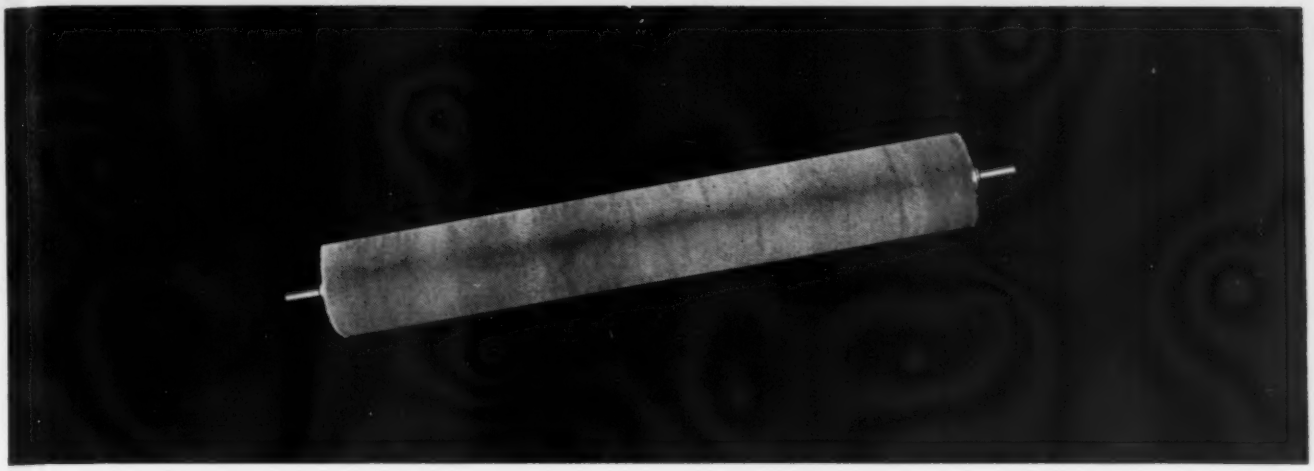
We recently checked through the cotton-conveying lines in our mill for fan pressure, balance, and speed and found to our astonishment that some of the speeds and pressures were all out of balance in comparison with what they should have been. In my opinion, many mills could save considerable horsepower and trouble in the lines if they would occasionally check up on the fan speeds, the con-

(*Continued on page 166*)

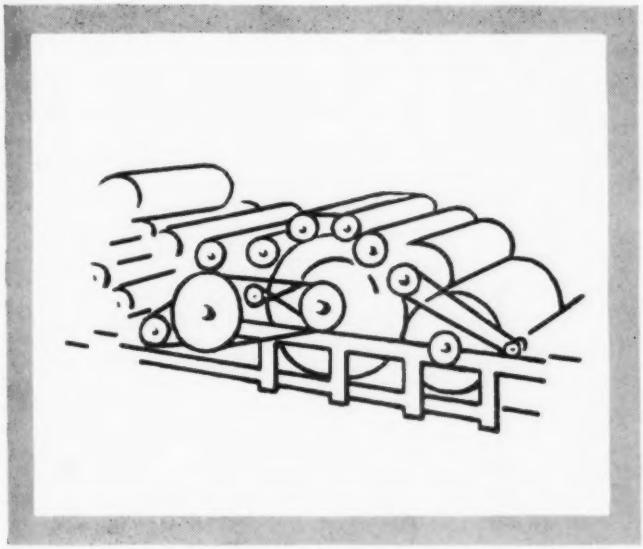
TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"Now let's see—what else can I hang on it."



Fullergript WORSTED Card Brushes



Last Twice as Long!

RECORDS at a prominent Eastern wool combing plant reveal this double service life of Fullergript morel card brushes. The reason lies in Fullergript construction. The solid, mass formation of Fullergript provides the extra brush material needed for longer life.

LESS CLEANING This extra density is also the reason Fullergript brushes require but ⅓ the combing out — every 6 months instead of every 2 months.

IMPROVED PRODUCT Because Fullergript is mounted on a steel core, there is no warping. Hence there is *no* concave brush wear. Long wool fibers are *all* pushed onto the pins — no rolling or pilling and fewer noils. This construction also eliminates splinters — your product grades better.

WRITE FOR DETAILS Our Fuller Engineers will send you full technical data about morel brushes — or about the many other improved types of brushes for textile plants.

INDUSTRIAL DIVISION

The **FULLER BRUSH** *Co.*

3594 MAIN ST. • HARTFORD 2, CONN.

Fullergript

"ROLL"-CALL

*shows top worsted mills winding with Roto-Coners**

Introduction of the all-metal (wear-resisting) rotary traverse allows mills winding the more abrasive yarns to increase winding room production with Roto-Coners*.

Today, an impressive list of mills testifies to the success of the Roto-Coner* in winding wool and worsted yarns.

The Rotary Traverse is a one-piece combination driving drum and traverse guide — precision grooved, dynamically balanced. By eliminating cams, it permits higher winding speeds (550 ypm for paper coning) and saves replacing fast-wearing parts. It needs no greasing, no adjustments, eliminates vibration.

And packages wound on the Roto-Coner* are free from imperfections and inequalities caused by slip drums, too small an angle of wind, and wear on reciprocating parts.

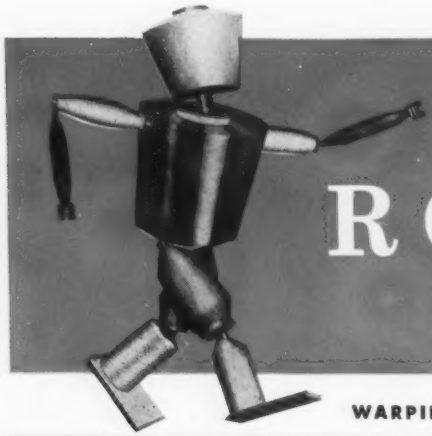
Read Bulletin 144 for more facts about America's fastest-selling winding machine.

UNIVERSAL WINDING COMPANY

Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

Agents in every principal textile center in the world.

23-7-11



LEESONA
REG. U.S. PAT. OFF.

ROTO-CONER*

Open-Wind Cones for Knitting

*Reg. U. S. Pat. Off.

WARPING CONES — DYEING PACKAGES — PARALLEL TUBES FOR TWISTING

Kinks AND SHORT-CUTS

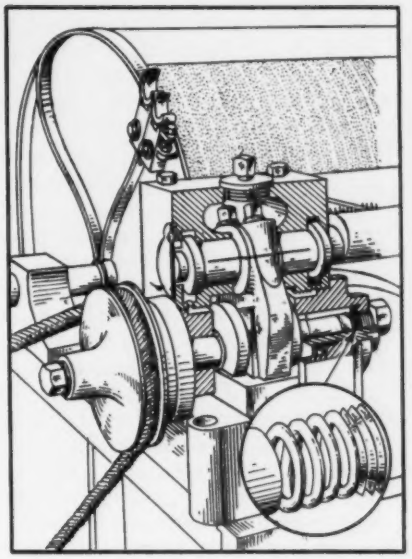
Spring Tension Applied To Comb-Box Split Bearing

✻ **PRIZE WINNER FOR JANUARY**
(November contest)

In many card rooms, considerable trouble is encountered with comb boxes rattling and comb-box eccentric shafts and split bearings wearing out prematurely. We have found that much of this trouble arises because of the construction of the comb-box fork and split bearing and the means by which adjustment for wear is made.

The inner sides of the fork are tapered so that they are somewhat wedge-shaped, the taper being approximately $\frac{1}{8}$ in. The split bearing, which fits over the eccentric shaft and slips into the open end of the fork, is made with its outer side tapered so that it is also somewhat wedge-shaped to fit snugly against the inner sides of the fork.

This bearing, being split down the middle so that it is in two separate pieces, works properly and quietly only when it is held firmly against the inside of the fork. Any play between the outer sides of the bearing and the fork, or between the inner circle of the bearing and the eccentric shaft, will cause the box to rattle and will also aggravate wear of the parts.



A ½x¾-in. coiled spring placed at the point between the eccentric-shaft step and the adjusting screw on a card comb box will prevent rattles and reduce wear of the eccentric shaft and split bearing. The spring, which applies tension to the wedge-shaped split bearing, also reduces the amount of adjusting necessary.

The standard means for putting tension against the long end of the bearing in order to hold it against the fork is by an adjusting screw in the comb-box step bearing and an eccentric-shaft stop, shown in the accompanying illustration. Adjustment is made by running the screw up against the step, which, in turn, presses against the end of the eccentric shaft.

We have found that by applying constant spring pressure against the step we can reduce the adjusting necessary, eliminate rattling, and obtain longer life of the eccentric shaft and split bearing. We use a coiled spring about ½ in. in diameter and about ¾ in. long.

To insert the spring, remove the adjusting screw, place the spring in the adjusting-screw hole, and replace the screw. Run the screw up until sufficient tension is placed against the split bearing. *(K-769) G. E. Morgan, Columbus, Ga.*

Stand With Rockers Aids in Handling Drums

Handling drums of oil, solvents, or even chemicals that are not dangerous can be made easier by the use of a rocker stand similar to the one shown in the sketch on the next page. Such drums usually weigh from 100 to 400 lb., and moving one of them or tilting it in position to pour some of the contents into a smaller container is often a straining job. The rockers at the end of the stand shown will permit the weight of the drum to aid in mounting the drum on the stand, and the stand itself can be used for storing the drum in a horizontal position.

The runners are made of about

A $25 SAVINGS BOND FOR YOUR KINK

✻ **You undoubtedly know of some kinks and short-cuts that are helpful to mill operation. Write them down and send them in. We pay promptly upon acceptance—*before* publication. In addition, we award *every month* a $25 Savings Bond for the accepted kink we consider most useful.**

Don't delay. Don't worry about dates. Send in your kink *now*. There is always a Savings Bond prize contest going on!

Don't take time to polish up your writing. We'll do that. Don't waste time to make a finished drawing, as our draftsmen will take over. Just write enough details and do enough drawing (if any drawing is necessary) to make clear to the editors how your idea works and what machine or process it is applicable to. Photos can be sent.

Look over the kinks in this and other issues. They will offer you some useful ideas, and they will also suggest other ideas you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments that are of merit—anything that will help production, improve quality, or cut costs.

Writing kinks is easy. It's fun. It's profitable. Give it a try. *Now*.

RULES OF CONTEST

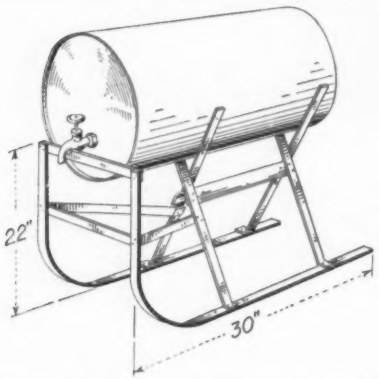
1. No limit to number of entries.
2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
5. Unless you advise to the contrary, we assume that we may sign your name to your kink when published.
6. Judges of the contest are editors of TEXTILE WORLD. Their decision is final.
7. Send your entries to either address:

TECHNICAL EDITOR
TEXTILE WORLD
330 W. 42nd St.
N. Y. 18, N. Y.

ASSOCIATE EDITOR
TEXTILE WORLD
P. O. Box 1641
Columbus, Ga.

KINKS & SHORT-CUTS

(Continued from page 157)



***A stand similar** to this one can be used for mounting a drum of oil or solvent so that the contents can be drawn from the drum. Place the upper lip under the edge of an upright drum, pull the drum toward the stand, and permit the stand to rock backward until the runners and the drum are in horizontal positions.*

1x1½-in. flat steel, bent as shown in the sketch. The same stock can also be used for the crosspieces and braces of the stand. A convenient size for the runners is about 30 to 36 in. in length and about 22 in. in height. The crosspieces should be of a height to hold the drum somewhat less than 22 in. from the floor, so that the end of the runner will form a lip against which the bottom of the drum will rest.

To use the rocker stand, place the lip of the runner under the edge of an upright drum. Pull the drum toward the stand, and permit the stand to rock backward on the floor. When the runners reach a horizontal position, the drum will also be in a horizontal position. *(K-635)* Wm. H. Mullen, Quincy, Mass.

Illuminated Desk Panel Aids Fabric Analysis

Designers and department heads who are charged with the responsibility for duplicating fabrics or analyzing them for defects will find that an illuminated desk panel saves time.

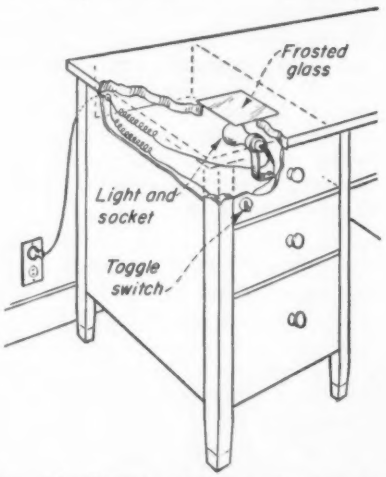
Such a panel, shown in the accompanying sketch, not only will aid in the operation of unravelling a sample; but in many instances, it will also eliminate the need for unravelling. The wales and courses of many knitted backing patterns, for example, stand out prominently against a well-lighted background; and the wales upon which the backing is tied can easily be seen.

Materials required for making a similar panel are: a 6x6-in. square of frosted glass, a frosted light bulb, a brass socket, a small piece of ⅛x½-in. flat iron, wire, a plug, and a switch.

Installing the panel is not difficult. A square hole 5¾x5¾ in. is cut into the desk top, centered over the left tier of drawers. A ¼-in. recess or ledge is chiseled around the hole to a depth equal to the thickness of the frosted glass. The glass placed on this ledge will then be flush with the desk top.

The flat iron is bent to form a c-clamp at one end to fit around the light socket. The other end forms a right angle and is fastened by screws to the drawer. The bulb is placed directly under the frosted glass.

A toggle switch is installed in the drawer front, and a hole is drilled through the back of the desk to permit the passage of the wires from the socket to a wall plug. If the wires are coiled properly, the drawer can be opened and the front part of it used to store magnifiers, picks, tweezers, etc. Thus, all equipment is handy and ready for instant use. *(K-774)*



***An illuminated panel** in the top of a desk provides excellent lighting for a designer, laboratory technician, or weave-room overseer who must analyze samples of fabrics, check picks, etc.*

Grooves in Picker Stick Hold Power Strap

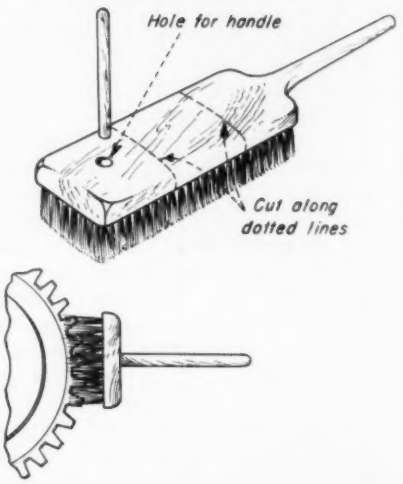
Occasionally a loom power strap works down on the picker stick, particularly if the strap is held in place by a clamp. When the strap slips down, the picking power is increased and often causes defective weaving, broken parts, and slam-offs.

One way to prevent such slippage of the power strap is to cut a series of grooves across the edge of the stick at the section where the power strap works. These grooves can be cut with a three-cornered wood rasp. When the strap is put in place and the clamp tightened, the leather will be gripped firmly by these grooves; and no slippage will occur. *(K-752)*

Pulling Cotter Pins Aided by Special Pliers

***This pair of pliers** has been ground on an emery wheel to make it into a tool specially fitted for removing cotter pins. One handle was ground at a to the approximate shape of the point of a screwdriver. Lip b was cut to a tapered point, and lip c was ground concave for receiving b. (K-742)*

Cleaning Gears Made Easy By Short-Bristle Brush



***Cleaning take-up gears** can be made an easy job with the aid of the brush shown here. Use a worn-out, long-handled brush, and cut the bristles so that you have only a short stubble. This stubble is good for cleaning grease, lint, and other waste accumulations from gears.*

Cut the brush into 4-in. sections (most cleaning brushes will make two or three of these short cleaning brushes). Drill a hole through the wooden back and insert a short length of discarded broom handle.

Dip the brush in a cleaning solvent and force the stubby bristles through the gear teeth. Heavy grease and waste adhering to the teeth will loosen up readily. (K-639)

Loading Handtrucks Made Easy by Skids

We had one or two serious accidents in our mill as a result of workers straining to move heavy packing cases. These cases measure 32x36x44 in. and weigh approximately 400 lb. when full. Our practice was to store the cases end up on the floor; and when it was necessary to move one of them, a man worked the tongue of a handtruck under one side of the case and pulled the case over on the truck.

After the accidents, we built skids

Why worry about unsettled prices of fats? ...use

Here's a better size softener that includes no animal fats!

Developed two years ago when fats were so scarce, and since then proven in production, time after time, HOUGHTO-SIZE CW is a positive answer to your sizing problems.

It contains no animal fats, being formulated on an entirely new basis. And the sizing advantages it gives you will be surprising. To sum them up:

A one-piece size; nothing to add but starch and water . . . much lower kettle cost . . . greatly increased breaking strength . . . a free-running warp which won't stick to dry-cans . . . definitely improved weaving efficiency.

For first-hand proof, ask the Houghton Man to arrange for a demonstration, or write E. F. Houghton & Co., Philadelphia or Charlotte.

HOUGHTO-SIZE CW ...for cotton warps

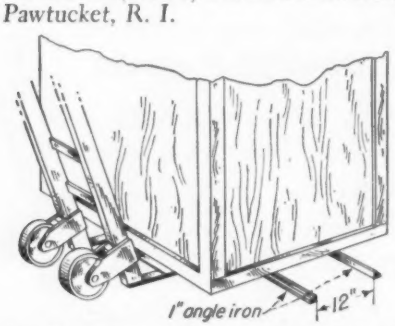
KINKS & SHORT-CUTS

(Continued from page 158)

for storing the cases. These skids not only eliminated most of the strain formerly associated with loading a case on a truck, but they also provided better storage for the cases.

To make the skids, two 36-in. lengths of 1-in. angle iron were fastened to the floor with lag screws. The angle-iron pieces were placed 12 in. apart. (Hardwood strips or ¾- or 1-in. pipe fastened to the floor would do the job as well as angle iron.)

When a packing case is stored on the skids, the overlap of the 32-in. side over the 12-in. width of the skids is divided equally at each end so that the case will rest securely upon the skids. Since the edges of the case are 1 in. off the floor, it is easy for the operator to remove or insert the tongue of his handtruck. When the case is reloaded on the truck, it is much easier to pull the case over on the truck. *(K-778) Richard Dilworth, Pawtucket, R. I.*



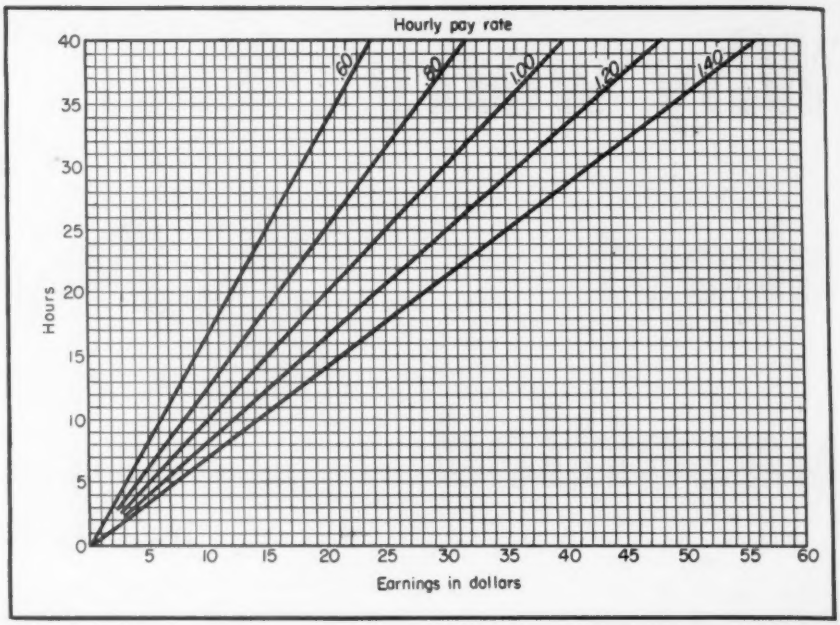
Loading a heavy packing case on a handtruck is considerably easier if the case is stored on skids. The skids shown here are lengths of 1-in. angle iron placed 12 in. apart and screwed to the floor.

Lathe Used To Hold Parts To Be Soldered

Holding small parts to be soldered or brazed is sometimes a tedious and difficult task. Often, the best way to hold them to insure a good joint of the two parts is by means of the chuck of a lathe or drill press.

Place one piece of the part to be soldered in the work chuck and the other in the tool chuck. The two parts can then be brought together in accurate alignment and held together under as much pressure as needed until the solder has been made.

Important advantages of the holding method are that both the operator's hands are free, the parts are held accurately and firmly, and there is no possibility of the holding tools burning the operator's hands. *(K-779) W. E. Warner, Essex, England*



This graph, based upon hours worked multiplied by an hourly pay rate, shows the total earnings of a worker. To use the graph, locate the point where the hourly rate line intersects the hour line. At this point, follow the vertical line down to the earnings line. Each dollar unit should be divided into five units of 20c.

This Payroll Graph Saves Figuring Earnings

Mill supervisors are frequently called upon to figure the earnings of employees, and working up these figures often consumes time that the supervisor needs to spend on other duties. In many cases, time can be saved by using a graph similar to the one shown in the above illustration.

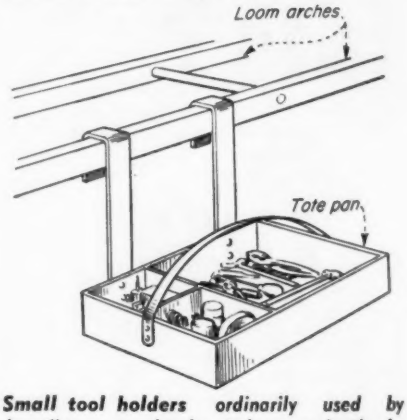
Although the graph shown was constructed to show earnings on the basis of hours multiplied by an hourly pay rate, a similar graph could be made up for a piece rate multiplied by hanks, picks, pounds, etc. To substitute a piece rate for the hourly rate, designate the diagonal lines by the piece rates and the vertical line at the left by the number of hanks, picks, etc.

Each unit shown has been divided into fifths. For convenience in using such a graph, the units should be divided into tenths so that a greater degree of accuracy can be obtained.

We use the graph in the following manner: Suppose a worker earns $1.20 per hr. and works 31 hr. On the diagonal line labeled 1.20, locate the point where this line is intersected by the horizontal line designated 31. There will also be a vertical line that intersects the diagonal line at this point. Follow the vertical line downward to the horizontal base line. The answer, previously worked out and entered on this line, is $37.20.

It is obvious that one graph to contain as many lines as would be needed for a whole department or a whole mill would be cumbersome and hard to keep and use. It is best, therefore, to have several graphs with only a few rates on each one. *(K-780) G. A. Hilbert, Paterson, N. J.*

Strap-Iron Hangers Hold Fixer's Tool Box

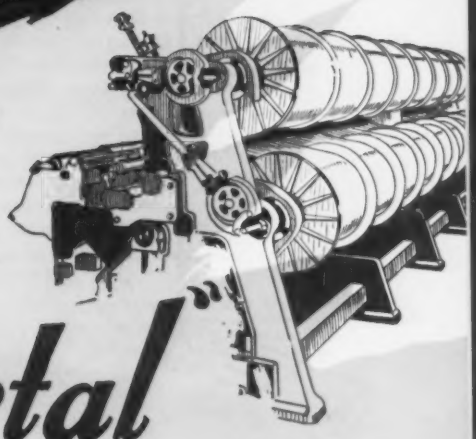


Small tool holders ordinarily used by loomfixers can be located conveniently by attaching strap-iron hangers to the holder and hooking the hangers over the arch of the loom.

A fixer usually has a large tool box in which he keeps all his tools. When he has a breakdown, he uses a small tool box or pan to carry the tools he will need at the machine. Ordinarily, he places this box or pan on the floor; and often it is kicked around or overturned. If he is adjusting or overhauling a machine, perhaps a loom, and is standing up much of his time, much stooping, bending, and reaching is involved in taking tools out of the box and replacing them.

I have found that placing hangers

Which metal is better for TRICOT *beams* ALUMINUM *or* MAGNESIUM?



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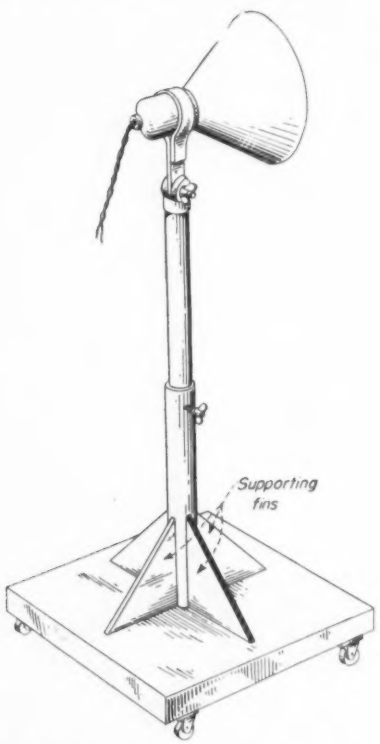
KINKS & SHORT-CUTS

(Continued from page 160)

on the side of the tool pan (we call it a "tote" pan) so that the pan can be hung to the arch of the loom is a help, particularly when I am making adjustments on a loom from a standing position.

I make the hangers out of two lengths of strap iron. One end of each piece is bent in the shape of a square hook so that it can be hooked over the arch of the loom. The other end is secured to one side of the tote pan by drilling holes and riveting or bolting the strap-iron pieces to the pan. *(K-676)*

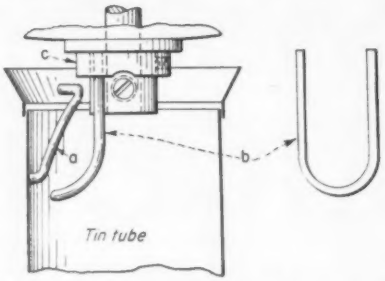
Adjustable, Portable Lamp May Find Many Uses



***A lamp mounted** on an adjustable, portable stand is often useful for focusing light under a machine or in other places where obstructions cut off light. The portable feature can be had by mounting the stand on a solid or cross base, to which four casters are attached.*

The adjustable feature can be arranged by dividing the upright support into two sections, the upper section being slightly smaller than the lower section so that it will slide down into the lower section. A wing nut in the lower section can be used to clamp the upper section at whatever height desired. The clamp by which the lamp is secured to the stand also offers adjustment in that the lamp can be swung up or down. (K-566) Wm. H. Mullen, Quincy, Mass.

Small Loop of Wire Aids Half-Hose Knitter

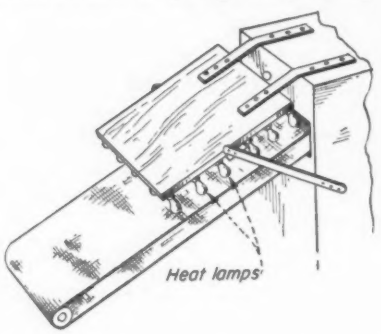


***When fin a failed** to guide heavy half hose down the tube on a knitting machine, wire friction loop b was secured to collar c to aid the fin.*

While knitting some unusually heavy half hose, we experienced some difficulty in getting the hose down through the tube of the machine. Ordinarily, the two diagonal wires, or fins—one of which is shown at *a* in the accompanying sketch—accomplish this job satisfactorily; but in this instance, the heaviness of the hose necessitated the additional friction loop shown at *b* in the sketch.

The loop of wire is securely fastened in collar *c*, which is held in place against the hub of the dial by a 10/32-in. setscrew. In setting collar *c* after loop *b* has been connected, turn the collar so that the dial can be lifted or lowered without interfering with fin *a*. After the collar has been set, it may be necessary to cut out a small clearance for the dial setscrew as shown in the sketch. *(K-775) Walter A. Simond, Franklin, N. H.*

Installation of Lamps Increases Drying Capacity

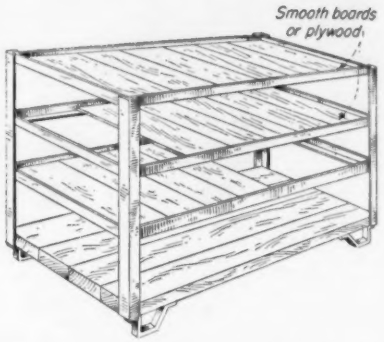


***Auxiliary drying capacity** can be obtained by installing heating lamps on a panel, as shown here. Circuits in the wiring can be arranged so that all or only some of the lamps may be used.*

When an occasional bottleneck arises at the pin dryer, a bank of heat lamps placed at the point where the cloth enters the dryer will speed the operation. Since the temperatures used vary in different mills, the number of lamps and heating capacity have to be adjusted to individual needs. The temperature should, however, closely approximate that of the first chamber of the dryer.

The lamps are placed in rows on a board as shown in the accompanying sketch. The lamps should be wired in parallel, so that when one lamp burns out the circuit will remain intact. If varying temperatures are desired, two or more switches can be used, each being connected to every other lamp in the rows. This arrangement will give even coverage when only a portion of the unit is used. *(K-770)*

Detachable Truck Platform Used as Base for Shelves



***An ordinary detachable** truck platform can be converted to a movable storage or transporting rack for relatively small parts or packages by adding shelves as shown here. The frame of the rack is made by welding upright stands of angle iron to the corners of the platform. These uprights may be any convenient height for supporting the number of shelves desired.*

At the points where the shelves are to be located, weld sides and ends of angle iron, with the angles facing inward. Now make the shelves by placing smooth boards or plywood on the lower horizontal sides of the angle-iron ends and sides. (K-565)

Adjustable Support Is Useful in Shop

In machine and carpenter shops, it is frequently necessary to feed long lengths of material to a machine, saw, etc.; and often, the off end of the material must be supported to facilitate handling and insure accurate work at the other end. In such instances, a supporting roll adjustable as to height, as shown in the sketch on next page, is useful.

To make such a supporting stand, weld a length (usually about 2 or 2½ ft.) of 2-in. pipe upright to a base of ½-in. plate steel about 18 in. in diameter. To the upper end of this upright pipe, weld a large coarse-threaded nut somewhat less than 2 in. in inside

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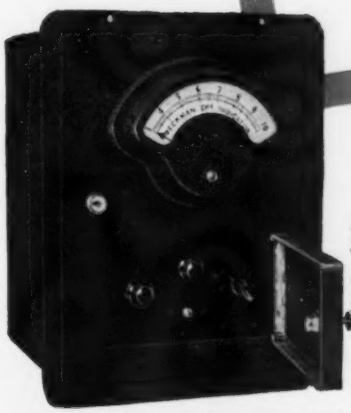

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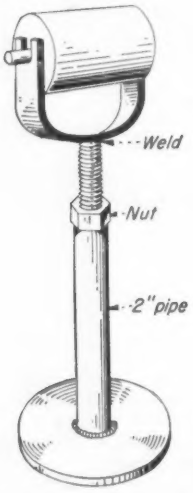
KINKS & SHORT-CUTS

(Continued from page 162)



This roll, adjustable as to height by screwing the threaded roll up or down in the nut welded to the top of the pipe, is useful for supporting long lengths of material to be machined, sawed, etc.

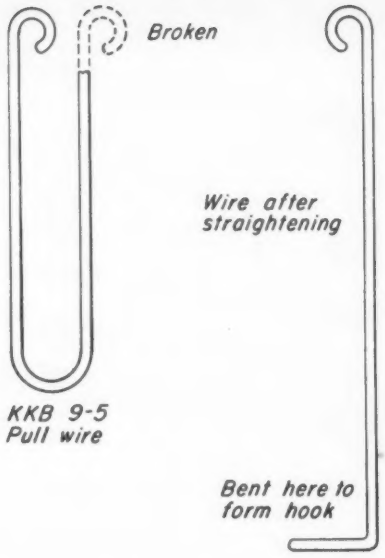
diameter so that a threaded rod screwed down in the nut will clear the pipe and extend downward inside the pipe.

Now secure a threaded rod, or thread one, that will screw down in the nut on the upright pipe. To one end of this rod, weld a u-bracket to hold the supporting roll. Slots should be cut in the upper ends of the bracket to receive the journals of the roll. The roll may be solid or grooved and of a length suitable to support the material to be fed to the machine. If round stock is to be fed, it will be best to let the slotted ends of the U-bracket extend above the roll to prevent the stock from sliding off the end of the roll. *(K-652)*

Pull Wires Used For Retrieving Bobbins

The pull wires (Catalog No. KKB 9-5) on a Barber-Colman automatic spooler usually break at the top near one of the two loops, as shown in the accompanying sketch. These broken wires are usually thrown away, but an excellent use for some of them is for retrieving bobbins that have dropped on the floor and rolled under the spooler.

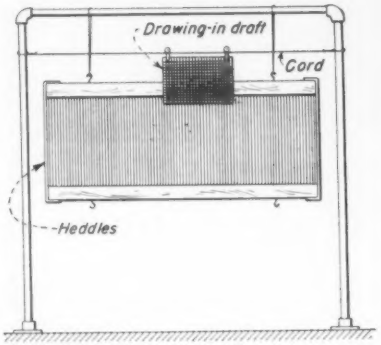
As shown in the sketch, the wire should be straightened, leaving the unbroken loop at one end. At the other end, bend the wire at a right angle to form a hook to insert into the barrel of a bobbin. When the



Straighten broken pull wires from a Barber-Colman spooler and use them for pulling dropped bobbins from underneath the spooler.

wire is not in use, it can be conveniently kept on a nail or screw in a post or wall by placing the hook over the nail or screw. *(K-722)*

Place Warp Design In Easy-Reading Position

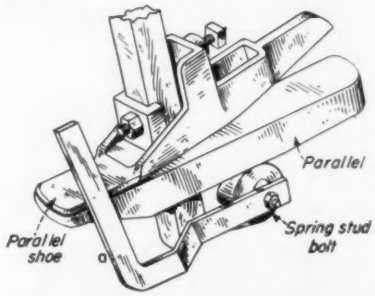


Drawing in a fancy warp design can be aided by placing the design within easy-reading distance of the drawing-in hand. We attach our design to a cord secured to each side of the drawing-in frame, as shown here. (K-751)

Stop for Parallel Shoe Insures Straight Pick

Loomfixers often have difficulty in getting a Draper loom to pick straight when the parallel shoe becomes sufficiently worn to prevent it from lying straight and square on the parallel. This trouble can usually be overcome by securing a metal stop against the back side of the parallel, as shown in the accompanying illustration.

To make such a stop, secure a length of strap iron $1\frac{1}{2}$x$\frac{3}{8}$ in. and bend it to the shape shown at a. Drill a hole in one end of the metal, as shown, and fasten the bent stop to the spring stud bolt. *(K-771)* Albert Ureel, Portland, Ore.



A straight pick can be obtained in spite of a worn parallel shoe by bolting a strap-iron stop similar to the one shown here to the spring stud bolt on the back of the parallel spring shell.

Dye-Test Swatches Are Dried in 3 Min.

We formerly dried swatches in the dye house by steam or electric heating coils in about 15 min. This drying time has been cut to approximately 3 min. by the installation of the 14x17x23-in. oven shown in this photograph.

The oven is then equipped with four 250-watt infrared lamps, mounted in pairs facing each other 2¾ in. apart.

The oven was homemade, being built of ¼-in. heat-insulating board supported in a frame of 1-in. angle iron. Standard porcelain lamp sockets are mounted on the outside of the oven so that they will not be damaged by excessive heat. The oven has a hinged door and is coated inside and out with aluminum paint. The swatches are supported between the lamps on a T-clip, hung through a slot in the top of the oven. (K-776)

Fasten Chuck Key To the Drill Press

A small-sized leno weaving chain can be used to secure the chuck key to the drill press to prevent its loss. In plants where the leno chains are not available, small chains can be purchased for a few cents at a local store. Attaching the key to the drill press avoids loss of time in searching for a lost key. *(K-641)*

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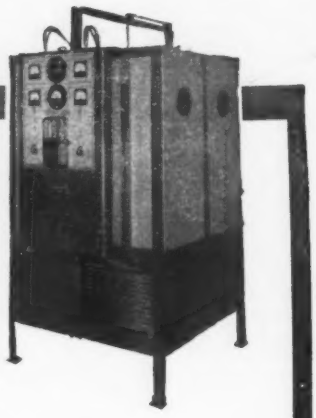

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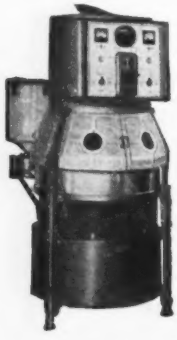

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ATLAS ELECTRIC DEVICES CO.

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(Continued from page 154)

dition of the fan wheels, and the actual velocities of air in the conveying lines.

Cotton is abrasive and can wear the edge off a brass wheel in a surprisingly short time.

We use an Alnor Velometer for making these air-velocity tests and have found it satisfactory. However, the filter on the instrument must be handled carefully in order to prevent it from getting plugged up, in which case a false reading will be obtained. We have also used this instrument to check air velocity in cases where a mechanic set the dampers in a way that he thought was right but which sometimes was wrong from the standpoint of pressure loss.

A water-column manometer is more reliable and does not require so large a hole in the pipe for taking pressure readings. We have obtained some undependable readings with the manometer when holes were punched in high-velocity ducts. For this reason, we now drill all our test holes and have found that we get must more accurate readings.

While on this subject of conveyor-line air, I should like to mention that we have also done some experimenting on the question of where the air that carries the cotton in these lines comes from. It has been standard practice for years to let the air come from the room in which the intakes are located. In winter when the doors and windows are closed, the suction of the fans lowers the air content of the room so that insufficient air is available to the fans. The result is that air pressure in the lines is lowered.

For some time now, we have been using outside-air intakes and hopper-type fittings. This arrangement has worked well. This type of hopper has been used for a long time in the woodworking industry but has been overlooked by the textile industry. *(R-390)*

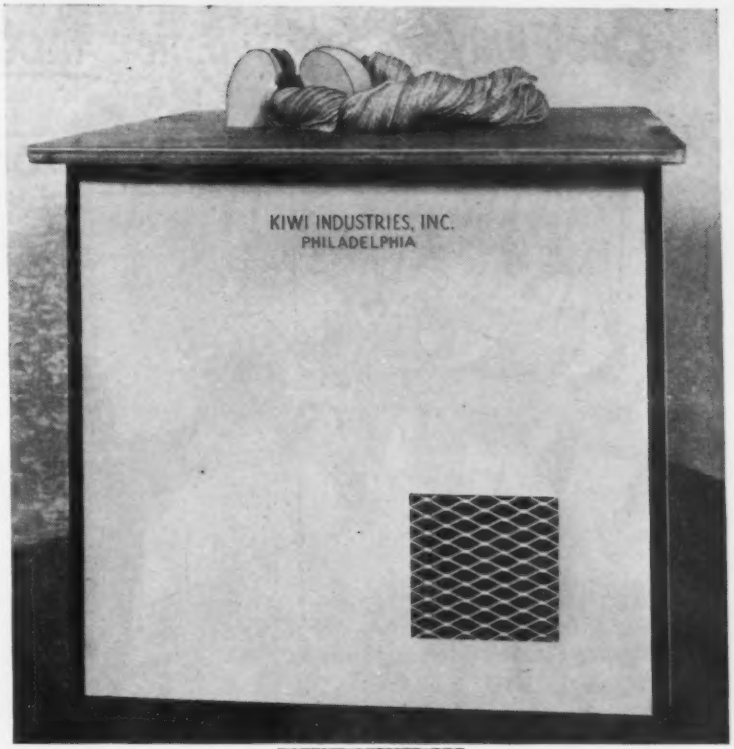
"Labor-Lorn" Column Proposed by Mill Man

TEXTILE WORLD is one of my favorite publications. Your Questions & Answers department has often furnished me with practical ideas I could use. Because of the helpfulness of your magazine, I want, in all seriousness, to propose a new department for the publication.

The main headache in our business (silk weaving) today is the irresponsible attitude of labor. Workers who are capable of being painstakingly careful craftsmen turn out sloppy, defective work; and we have no recourse but to put up with it. There is still a short-

Eliminate Skein Twisting by Hand

with this



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Here is a NEW machine needed all these years by the textile industry . . . an electrically operated V-belt drive skein twister that eliminates skein twisting by hand.

Introduced for the first time now, it is a lightweight, compact, portable unit that can be easily operated by anyone. For instance, the same person who inspects the skein can now also twist it, merely by first inspecting it, then placing it in a slot at the top of the table-like equipment, stepping on a petal . . . and zingo! . . . the skein is twisted. As fast as an inspector can put in and remove the skein, it can be twisted. Makes a better twist and a smaller package.

The twister is adaptable for any type of skein, even silk. Tightness of twisting can be regulated by the gears.

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True case history: Electric switches located in Tulsa, Okla., were wanted in Newark, N. J., to complete equipment and fulfill contract date. **21½** lb. package picked up the 17th at 5:05 P.M., delivered 3:35 A.M., just 10 hours later. **1239** miles, Air Express charge only **$8.10.** Other weights, any distance, similarly inexpensive and *fast*. Just 'phone your local Air Express Division, Railway Express Agency for fast shipping action.

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age in this area of the type of labor we need, since our work demands special skills. To my mind, the problems of productivity will be met only when employees get down to serious business in their duties.

Meanwhile, should like to propose that you publish, for the benefit of manufacturers like me, an "advice to the labor-lorn" column.

I am not joking! *(R-389)*

Informal Suggestion System Can Uncover Ideas

Suggestions are the backbone of a well-organized and successfully operated company. Every worker that has any interest in his work also has ideas of how he can make the job easier for himself or perhaps how the work can be speeded up in order to increase production and thereby increase his own pay check.

If these ideas can be used, all other workers may benefit and the company may be able to produce more of its product at a lower cost. Now that the backlog of orders has started to dwindle, the manufacturer must once again study his manufacturing costs and every method must be employed to reduce these costs.

A well-established suggestion system with a capable committee to review the ideas submitted by the production workers is a "must" for any company. Such a program will pay off in many ways.

Costs may be lowered through suggestions for better-working conditions, for improvements or additions to the safety program to reduce lost-time accidents, for more efficient methods of plant and machine operation, and for all other phases that enter into the over-all cost of producing the product.

Every idea or suggestion submitted by an employee should be answered. Employees have the right to be recognized and given satisfaction as to why the suggestion made was or was not accepted.

It is the duty of all supervisory personnel to assist employees with their suggestions, even if such suggestions may cover routine procedures that the supervisor should be executing as a part of his duties. It is most important to remember that it is the little items that are overlooked, not because of the lack of supervisory interest or knowledge but because of the rush of business.

The wise employer establishes a suggestion system in order to save the time of his supervisory personnel. If

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Florence Tailored Color is literally an on-the-platter Service . . . **complete** processing of cotton, wool, synthetic and blended yarns including dyeing, bleaching, finishing and winding.

Florence service combines the scientific facilities and skilled chemical knowledge of our laboratory colorists who KNOW the art of analyzing color and the processing of dyed yarn **tailored to your exact color requirements!** The color you specify, you get; in the shade, colorfastness and quality you must have

This scientifically controlled **Quality** in **Florence Tailored Color** is something "extra." It assures quality products for your customers.

Either you supply the yarn to be processed or, if possible, we obtain the quality you want and tailor-color it to your specifications. In each instance you get **Tailored Color.**

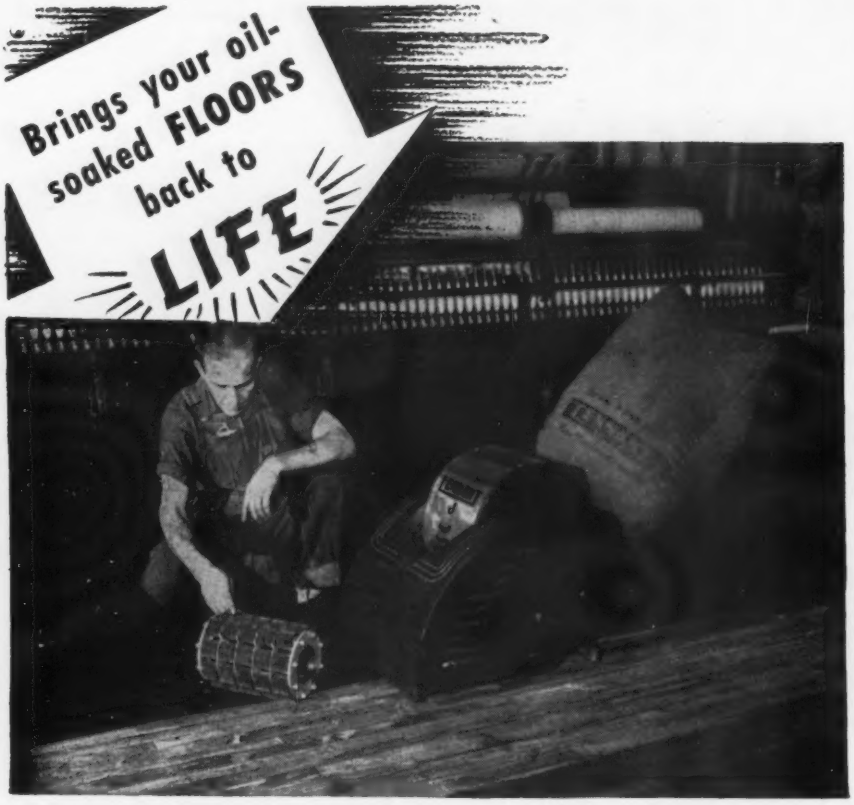
Specify **Florence Tailored Color** and get Service . . . **as you want it!**

FOR TAILORED COLOR WRITE

FLORENCE THREAD CO., INC.

RIVERSIDE • NEW JERSEY

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns



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Reconditioning dark, slippery, oil-soaked floors with the Tennant System *increased light reflection* 533% in the mill shown above.

You, too, can bring your old, slippery, oil-soaked floors back to life again—and *keep* them "like new" for years—with the Tennant System of Mill Floor Maintenance.

Clean, dry, hard floors—maintained by *dry cleaning*—increase your mill's efficiency. They improve working conditions, boost employee morale and promote safety.

THE TENNANT SYSTEM DOES THIS:

RECONDITIONS worn, oily surfaces. Removes soft, dingy topwood fibers and leaves a sound, vigorous floor surface.

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Oil Cover Paint

Paints over oil and dries in ½ hour! Tennant 201 Oil Cover Paint brightens hard-to-get-at floors under looms, spinning frames, etc. Provides attractive, easy-to-clean finish. Available in many colors.

no suggestion system is in effect and the management cannot see the value of it and declines to establish such a system, each foreman, superintendent, and other supervisory official should make it a point to talk with all the employees and listen to all suggestions that may be offered. In this manner, the supervisors will learn how the employees can assist in improving working conditions, methods of operation, etc. (R-355)

Fire in Stored Cotton Damaged 180 Bales

The recommendation of the Associated Factory Mutual Fire Insurance Cos. that bales of cotton stored in a warehouse be arranged in piles and the piles separated by open aisles was proved sound by a recent fire that occurred in a cotton mill.

Several hours after a shipment of cotton was stored in a warehouse, fire broke out in one of the piles of bales. The piles were arranged in three tiers, the bottom tier being of bales standing on end and the two top tiers of bales on side. The piles were separated by open 8-ft. aisles.

Sprinklers went on when the fire broke out, and the fire was confined to a single pile of bales; but all of the 180 bales in that pile were damaged.

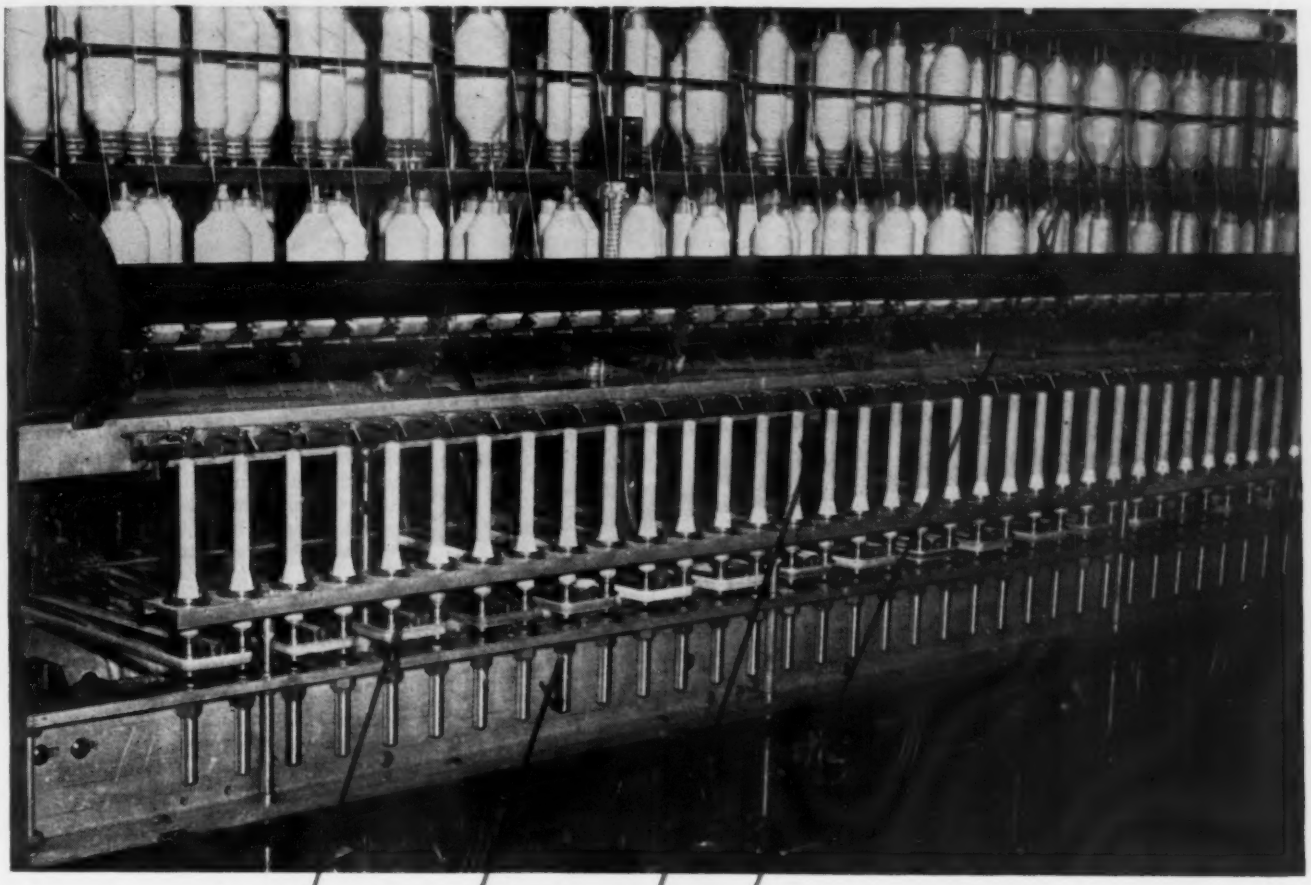
No cause for the fire was found. Apparently, fire existed in one of the bales when it was carried into the warehouse. After the bale was stored, the fire must have burned its way to the surface of the bale and spread to other bales. (R-372)

Vertical Organization May Increase Production

The old-time industrialists have been satisfied with straight-line organization and have not had time to find out how to organize their labor for best productivity. Although job analyses, aptitude tests, etc. are of some use, they are inadequate. Common sense in treating this problem appears to be the prime requisite. It is necessary to get the whole organizational picture and break it down on a vertical rather than a horizontal basis.

Possibly a special office is needed to do this job, such as the product-control office, where a product is planned and controlled throughout its entire production sequence. The important factor here is the scope of that form of organization. In many companies, such an organizational plan is followed; but the scope is so restricted that the plan is ineffectual. (R-387)

It's all Aluminum Extrusions



for H & B American Machine Company's cotton spinning frame

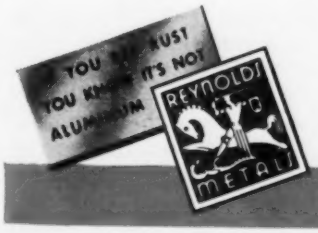
TO improve quality, speed production, and drastically cut machining work, H & B uses strong, heat-treated Reynolds Aluminum extrusions. These replace cast iron parts such as *ring rails, spindle rails,* and *roller beams.*

H & B takes advantage of the *light weight* and *high strength* of aluminum extrusions to reduce inertia in reversing motions, cut down counterbalance weights. All aluminum machine members—including doors, casing-off plates, separator blades and creel boards made of sturdy Reynolds Aluminum alloy sheet—*stay free from corrosion* . . . assure long service.

Maintenance costs are extremely low. Aluminum needs no "protective" coatings. It maintains its satin-smooth finish under every operating condition met in spinning and twisting plants. Moisture condensation on aluminum makes no stains on the yarn.

If you are designing a new machine or considering the purchase of new equipment, call in Reynolds textile engineers. Without any obligation they will help you take advantage of the many possibilities of aluminum design to cut costs and eliminate dead weight. Write our nearest field service office, or Industrial Machinery Division, Reynolds Metals Company, 310 Hanna Building, Cleveland 15, Ohio.

REYNOLDS METALS COMPANY, Aluminum Division, Louisville, Ky.



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Designed to keep pace with giant strides made in the science of air disinfection, this new Silva-A-King Germicidal unit gives positive protection against direct radiation while maintaining maximum concentration of germ-killing energy. Easy to install and completely adaptable to any room with regular electrical outlets.

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Questions and Answers

Spun-Rayon Selvage Yarns Require Proper Adjustment

Technical Editor:

We have put a good many looms on spun-rayon filling and are having some trouble with the filling breaking. Our filling number is 27s. One of our main troubles comes from the filling breaking in one selvage and catching up in the other. Can you advise us how to eliminate the trouble? (9214)

From the information given regarding the spun-filling breaks, it appears that the filling yarn is being cut in the selvage. There are several factors that can cause the trouble.

If you are running the warps with bobbin selvages, check the bobbin tension to make certain that the selvages do not have too much tension. Spun 27s rayon yarn is a delicate yarn; and if the selvage shedding is not equalized with body shedding, the selvages have a tendency to shear the yarn in two between the body and selvage. This trouble is heightened by adjusting the selvage shafts so that they open more than the body shafts. Selvages can be shedded less than the body.

If the selvages are run on the body shafts, the trouble can be in overcrowding the number of ends per dent in the selvage. Inspect the filling breaks through a regular pick glass. If the break is between the selvage and regular dent count on the body weave, the chances are that the selvage count is entirely too high. As an example: Should the body be a 3/1 per dent count and the selvage reeded 3/2, try a 2/2 selvage count in clearing up the trouble.

If the magnification shows the break occurring within the selvage, say within one or two dents from the outer edge, check the shuttle tension. If the filling is over-tensioned, it will break clean near the last edge dent and the trailing yarn will catch in the opposite selvage as the shed closes, thus giving a broken-pick or mispick effect according to the weave.

Rough reeds are also a possible

MANUFACTURERS' BULLETINS

***MILL EXECUTIVES** may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.*

Free FOR THE ASKING

1. **Alkyd resins,** their formulation and chemistry, are fully discussed in the autumn issue of *Interchemical Review,* publication of Interchemical Corp.

2. **A shipping-room guidebook,** discussing correct export packaging, and rules and regulations on packing for both export and domestic markets, is available from Diagraph-Bradley Industries, Inc.

3. **Lead and lead-lined valves** made by Federated Metals Div., American Smelting & Refining Co., are shown and described in a leaflet. Corrosion-resistant qualities and uses of each valve are listed.

4. **Gummed labels** for all business uses are described in a profusely illustrated catalog issued by Ever Ready Label Corp.

5. **The forced-draft dryer** made by Baird Associates for determination of moisture in wool is described in a new folder.

6. **The Alligator wide-belt cutter** made by Flexible Steel Lacing Co. is described in bulletin BC-350.

7. **Absence due to colds** may be reduced by industrial administration of Formula A-N-1, according to the manufacturer, Benson Laboratories, in a recent folder.

8. **A self-priming pump** equipped with an automatic spring valve, said to give faster, smoother transition from priming or vacuum pumping to centrifugal action, is described in a booklet issued by Allis-Chalmers Mfg. Co.

9. **Use of the Dyeometer** in studies of rayon dyeing is the subject of technical bulletin No. 795 of Calco Chemical Div., American Cyanamid Corp.

10. **The Worksaver electric tractor** of Yale & Towne Mfg. Co., Philadelphia Div., is shown and described in a folder.

11. **V-belts and sheaves,** including variable-pitch types, are shown and described in a folder issued by Dodge Mfg. Corp.

12. **A-C clamp ammeter,** model 633, of Weston Electrical Instrument Corp. is discussed in a recent folder.

13. **The PR-19 rib-body machine** made by H. Brinton & Co. is described in a new folder. Outstanding features of the machine and fabrics which can be produced are shown.

14. **A bronze gate valve** with Monel seat rings, No. 270-U, for 200-lb. service, and 34 other bronze gate valves are described in a 12-page folder offered by Jenkins Bros.

15. **Woven-wire conveyor belts** for industrial applications are fully discussed in a 56-page booklet issued by Cambridge Wire Cloth Co.

16. **Fire hose** for industrial protection is described in a catalog section available from B. F. Goodrich Co. Full specifications are listed.

17. **Water-soluble wool-fiber lubricant,** Fybrol 1115, a product of L. Sonneborn Sons, Inc., is described in a new folder. Performance results based on 2 yr. of mill use, as well as data on properties, are included.

18. **Photographic engineering-drawing reproduction** by use of Autopositive paper, a product of Eastman Kodak Co., is described in a new booklet.

19. **Industrial floats** made of copper, steel, Monel, and stainless steel for making volume and buoyancy calculations and for use on float valves and liquid-level controllers are described in a booklet issued by Chicago Float Works, Inc.

20. **Management by exception** through graphic representation of facts is discussed in a new booklet issued by Remington Rand, Inc. on their Kardex systems.

21. **The Lockstitch machine** with automatic lubrication for plain sewing operations is described and illustrated in bulletin No. 886 of Wilcox & Gibbs Sewing Machine Co.

22. **Financing of modernization** programs and machinery purchases is covered in a recent booklet of C. I. T. Corp.

23. **Duties of the watchman** in fire prevention are discussed in a recent publication of Factory Mutual Fire Insurance Cos.

24. **Check valves,** Ni-resist gate valves, variations in piping systems, and pipe insulation are topics discussed in the Sept.-Oct., 1947, issue of *Crane Valve World,* publication of Crane Co.

25. **Clorafin chlorinated paraffin,** product of Hercules Powder Co., is described in a recent booklet. Full application data are included.

26. **Y and angle valves** of the corrosion-resistant type are listed in folder 615 issued by Duriron Co.

27. **Acid- and alkali-proof floors** are discussed and shown in a bulletin offered by Atlas Mineral Products Co.

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28. Self-contained temperature regulators made by Leslie Co. are illustrated and described, along with specifications and application data, in a recent folder.

29. "Testing Terms for Better Understanding" is the title of a booklet describing various merchandise tests performed by U. S. Testing Co.

30. Straitlo strainers for use on water, steam, oil, air, and gas lines are shown and described in folder 115 of Hays Mfg. Co.

31. Conditioning water and other liquids are fully discussed in a 60-page handbook offered to plant executives and engineers by Liquid Conditioning Corp. All kinds of impurities are listed, and their effect and method of removal are described.

32. Molded-rubber cable connectors are shown and described in bulletin MC107 offered by Mines Equipment Co.

33. An all-purpose cleaner for the textile industry, Whistleclean, for cleaning floors, walls, and machines is discussed in a 6-page folder issued by American Oil & Disinfectant Co.

34. Ball bushings for friction-free linear motion of shafts are described in a folder published by Thomson Industries, Inc.

35. Worm-gear speed reducers that are fan-cooled are described in catalog #300 issued by Cleveland Worm & Gear Co.

36. Fiber fineness measurement by passage of air through a weighed sample, as accomplished by the Micronaire, is discussed in folder No. 50 of Sheffield Corp.

37. Material-handling-machinery service available at the new building of the New York branch of Yale & Towne Mfg. Co., including spare parts, service, and repairs, is described in a folder.

38. Synthetic resins of Hercules Powder Co. are described, and properties and uses listed, in a recent booklet.

39. Boring-tool operations with Kwik-Size boring tools are shown and discussed in a folder offered by Keukauna Machine Corp.

40. "Heliwelding" is the title of a booklet covering inert-gas-shielded arc welding done by equipment of Air Reduction Sales Co.

41. The twister-roll assembly, chromium-plated and ball-bearing mounted, made by Knox Metal Products Co., Thomson, Ga., is described in a recent folder.

42. Fork-lift-truck accessories for Towmotor trucks are illustrated and described in a folder offered by Towmotor Corp.

43. Centrifugal blowers and exhausters, their construction, specifications, and performance data, are described in an illustrated booklet issued by U. S. Hoffman Machinery Corp.

44. The axial air-gap motor made by Fairbanks, Morse & Co. is shown and described in a recent booklet. Construction and application data are included.

45. "Chemicals by Glyco" is the title of a 92-page manual listing and describing organic chemicals made by Glyco Products Co., Inc.

46. Pallet selection and engineering is discussed in a booklet offered by Pallet Sales Corp. Data on specifications and construction of hardwood pallets are included.

47. Methyl-purple titration indicator, a new product of Fleisher Chemical Co., is described in a folder.

48. The single-cylinder woolen card made by New England Machine Works is shown and described in a new folder; also included are details on the company's portable vacuum stripper.

49. Centrifugal casting to order of various metals and alloys, done by Shenango-Penn Mold Co., is described in a recent folder. Full specifications are listed.

50. Boiler blowoff systems designed by Liquid Conditioning Corp. are discussed in a recent leaflet.

51. Side-suction centrifugal pumps of the two-ball-bearing type are shown and described in a booklet available from The Deming Co.

52. A laboratory-size water demineralizer for purification of 5 to 15 gal. per hr. is described in a folder issued by Barnstead Still & Sterilizer Co.

53. Light-duty V-belts, their use and construction, are covered in a leaflet published by B. F. Goodrich Co.

54. Open heaters of the direct-contact type are discussed in a booklet offered by Cochrane Corp.

55. Alcoa temper designations for cast and wrought products are listed in a booklet available from Aluminum Co. of America.

56. Lift trucks made by Hyster Co. are concisely but fully described in condensed catalog 1074.

57. Diesel engines, Type SS turbocharged, are described in folder 10311 available from Ingersoll-Rand Co.

58. Welding and cutting equipment made by Victor Equipment Co. is shown and described in a recent catalog. Construction and application data are included.

59. Magnesium die castings made to order by Litemetal Diecast, Inc., are discussed in a recent folder.

60. Time-cycle controllers made by Bristol Co. are fully described in bulletin C305. Construction and application data are included.

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source of selvage breaks. In this case, the filling yarn will be cut near or within the selvage. This source is the least logical, and such trouble can usually be determined from the sharp appearances of the defective reed wires. Sharp reeds must be thoroughly cleaned and polished. Reeds must also be centered with the warp width.

If the breaks can be traced to shed timing and temples, time the shed to $\frac{1}{8}$ in. after the beat-up. This practice allows the filling to attain its full length before the beating in of the pick and prevents cutting near the selvages.

Carry the least warp weight possible to make a clean face without overbeating. This practice prevents cloth-width contraction and helps temples to keep the width out to the full-reed width at the beat-up. Temple rolls must be in good condition and temple heads set to keep the cloth out to as full as reed width as possible. One of the causes of sheared spun-rayon yarns within the selvages is worn rolls and poorly set temples. This condition can be readily noticed during weaving. As the reed beats up, cloth contraction pulls the yarn in to a narrow width, whereas the reed forces the pick out to the full-reed width against the narrowing effect. If the temple fails to hold, the shedding is timed before front center, or if there is too much warp tension, spun-rayon yarn will tear out of the selvage as the loom continues to run, leaving the selvage with a float-like appearance.

Several Methods Available For Random Dyeing Yarn

Technical Editor:

We are interested in making random-dyed cotton yarns and understand that there are several methods for doing this job. One that we have heard of is an attachment to put on a winding machine, while another is that of injecting the dye liquid directly into the cone of yarn. Would you furnish us with any information you may have on the procedure involved? (9215).

There are several methods for producing random-dyed effects in cotton yarn.

In one method, a skein of yarn is immersed in the dye bath, say approximately a third of its length. After dyeing has gone on for a short period of time, the yarn is then lowered another third and allowed to dye for a given period. The skein is then completely immersed for the proper length of time. In this way, a three-tone effect is obtained.

A second method for random dye-

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1. Pulling the Load Onto the Load-plate

edge of the load-base sheet. When the rack is retracted, powerful hydraulic pressure closes the gripper firmly upon the load-base sheet; the load then is pulled onto the load-plate. See picture No. 1. Lifting, tilting and lowering are done in the usual manner.

2. Pushing the Load Off at Destination

PUSHES THE LOAD OFF AT DESTINATION

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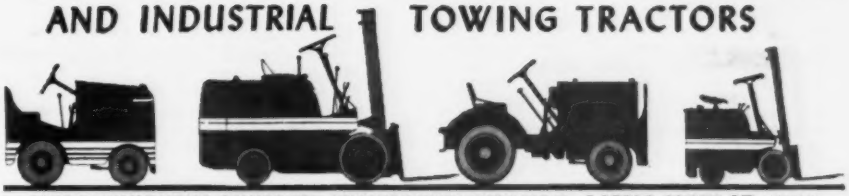

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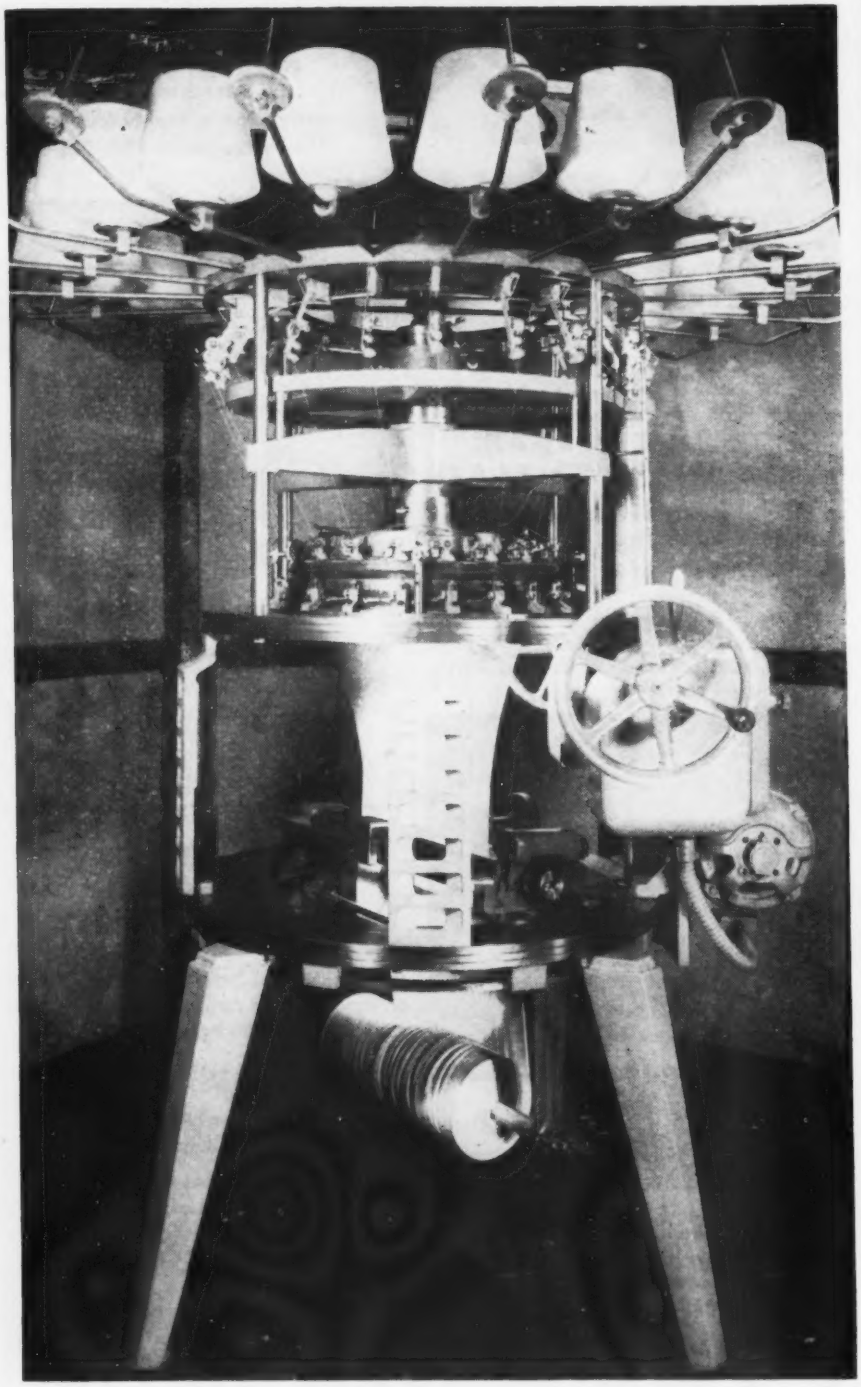

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ing is to take a skein of yarn and tie knots in it at given intervals. The yarn is then placed in the dye bath until the desired shade is obtained upon the loose ends. The knots, of course, dye either a lighter shade or not at all.

In a third method, the yarn is wound on a frame and the frame is clamped inside an outer frame that may consist, for example, of alternate solid strips and open strips. The clamped-in yarn and frame is then placed in the dye bath, the dye going onto the exposed portions while the yarn under the solid portions of the frame remains undyed.

Various types of dyeing, ranging from directs to vats may be applied by these procedures.

You are correct in stating that yarn can also be random dyed in package form. There is a machine that consists essentially of six needles evenly spaced. Each of these needles can be connected to a tank of dye, with a different color for each needle if desired. The needles are mounted on a frame, and the operator takes a cone of yarn and forces it down upon the needles so that they penetrate to the center of the package. By means of pressure, dye is then forced from the needles into the package. In order to go completely around the package, this operation is repeated three or four times. Only direct colors are successfully applied by this method.

Straight-Wire Clothing Does Not Card Properly

Technical Editor:

Why was cotton-card clothing wire designed so that it has a knee in it? It seems to me that a straight wire set at an angle in the base of the clothing would not load so easily, would strip more freely, and would permit a more satisfactory point to be obtained in grinding. (9176)

A patent on a straight-wire card clothing made with a short tooth was issued in 1880, and this type of clothing was revived and tried in the Greenville, S. C., area during the 1930s. The results of these latter experiments were not particularly satisfactory.

The bend in the card-clothing wire is designed to give a certain amount of spring to the wire. When the wire comes into contact with the cotton, the spring gives the wire a tendency to work down toward the base of the clothing. A straight-tooth clothing wire is rigid and has a tendency to "hair up" and work itself into a plane higher than the surface of the clothing. Such a condition, of course, is

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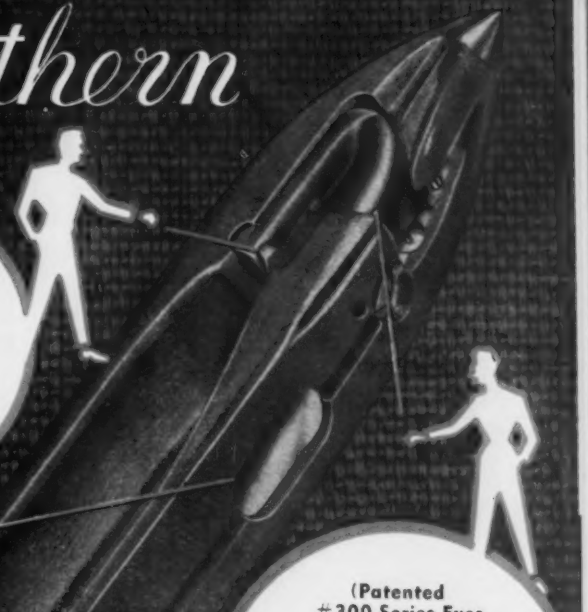

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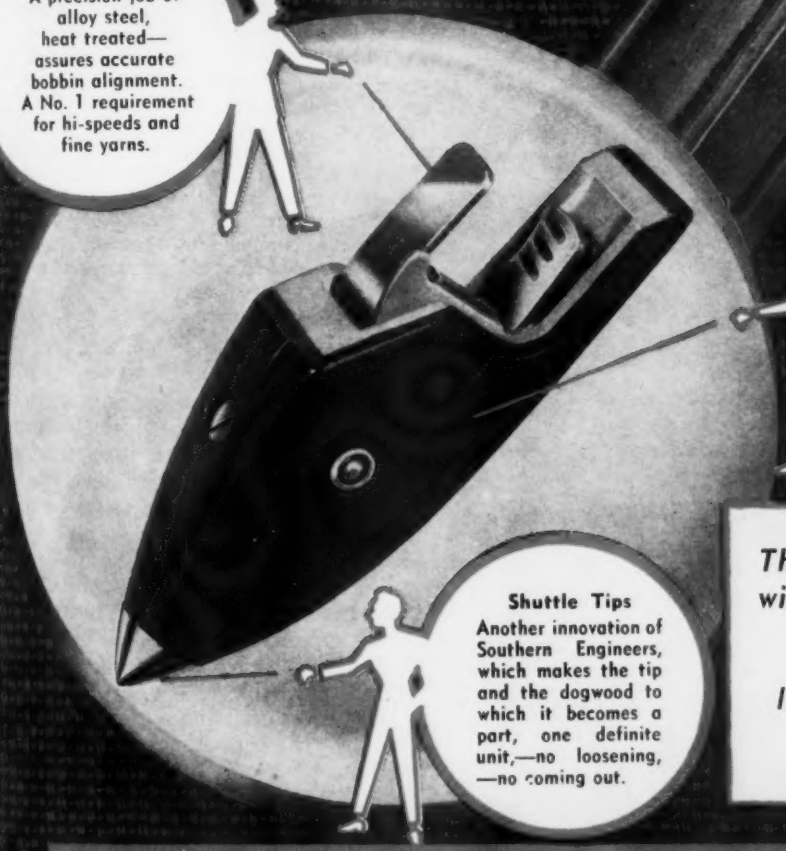

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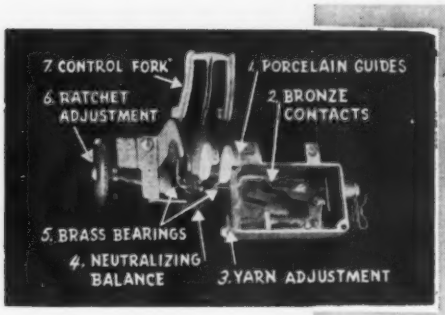

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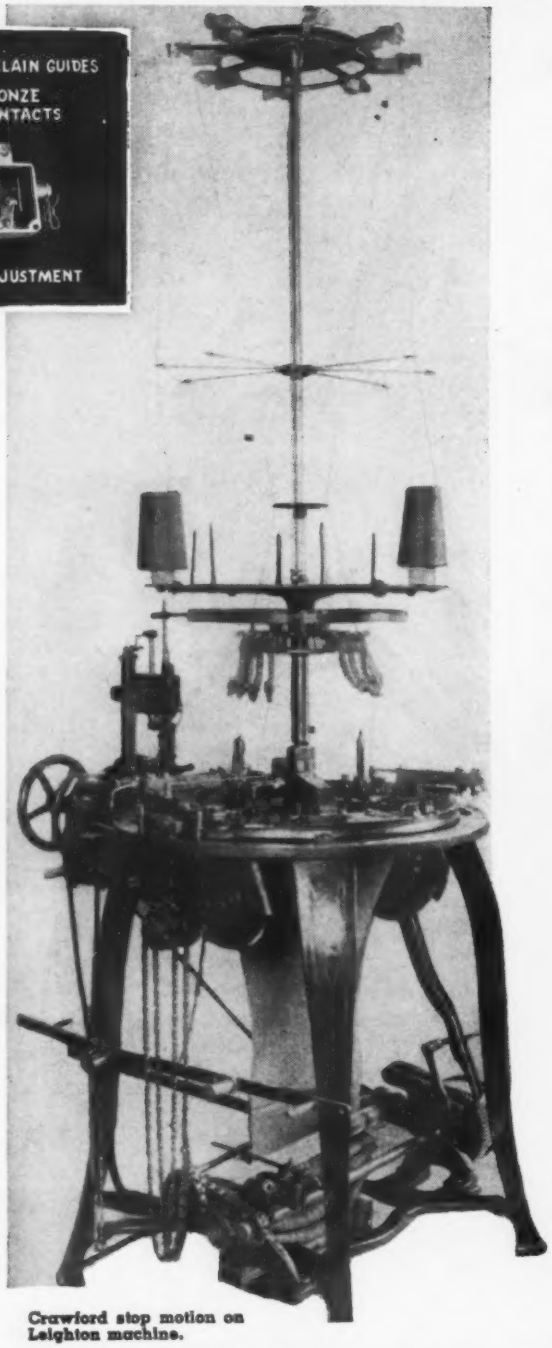

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not conducive to good carding or to the maintenance of the clothing.

Your opinion that straight-wire clothing would not load so easily and would strip more freely is correct. However, a satisfactory point would be more difficult to maintain and clothing jams would undoubtedly occur more frequently.

Economy of Knitted Headers Should Be Tested by Mill

Technical Editor:

We are knitting on 20-in. Tompkins spring-needle machines, the fabric being made of 14/1 carded-cotton yarn. We are using this cotton yarn to save waste cost. The machines referred to operate on rather expensive wool yarn and, as you probably know, it is necessary to cut some fabric off the ends of the rolls. It was thought that considerable savings would be effected by knitting approximately 18 in. of cotton fabric between each roll, and it is for this purpose that the 14s cotton yarn is used. We have also at times used 20/1 carded-cotton yarn. We should like to ascertain which is the cheaper yarn to use, 14s or 20s. On the basis of yarn prices, 14s is cheaper than 20s; but more 20s yarn would be used in the knitting of this fabric, and to some extent this fact would offset the cheaper-priced yarn.

We should appreciate, therefore, your advising us which would be the cheaper yarn to use, on the basis of 1 lb. of fabric from a 20-in. machine. Further, will you kindly explain in detail how you arrive at your conclusions? (9218)

The practice of heading rolls with cotton or a cheaper yarn than that in the body of the goods is a common one. It is a good practice for, over and above the savings in cost of yarn, there is a definite saving effected by having cotton between pieces to absorb oil and dirt left from the cleaning process. If the heading is long enough, most of the oil and dirt will be worked off the needles and blades before the body fabric is knitted.

Since no information is given on the handling of courses, the required weight of the cotton fabric, or the finishing processes, it is impossible to determine the exact ratio of the amounts of the two yarns used. If the fabric made from 20s yarn must approximate the weight obtained with 14s, the number of courses must be increased accordingly. If the weight of the cotton header is unimportant, the stitch length could remain the same—which would leave only the relative weights of the yarns to be considered.

Cotton headers sometimes have to be coursed up to approximate the weight of the good cloth so that there will be a similarity of handling in the

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finishing processes. This is true when a pin dryer is used. Loosely knitted cotton headers have been known to shrink to a size less than half that of the body of the roll. It is impossible to stretch it enough to get it on the pin guides. The last yard of good cloth is usually drawn in with it and sometimes must be cut off.

To get the exact relative costs of the yarns, a test made under the actual running conditions would be the best procedure. To make the test, knit an extra 18 in. of cotton fabric on the end of six pieces. Measure the length accurately from the needle line. When cutting the test cloth, follow the course marked all the way around the circumference of the cloth so that the cut will be accurate. Do this with six headers made with 14s yarn and six made with 20s yarn. Weigh each piece on a grain scale, and add all the weights of each type (in grains). Divide these totals by six to get a good average figure of the relative weight of each type.

Now take the price of 14s cotton yarn per pound and divide it by 7,000 (the number of grains in 1 lb.). This calculation will give the price of one grain of 14s cotton. Multiply this price by the average weight obtained in the 14s test pieces. This figure will represent the exact cost of the 18 in. of cotton fabric on each roll.

Repeat the whole operation with the 20s yarn test pieces and compare the costs obtained. Using grains as the weight unit gives rather large figures to work with, but it makes the degree of accuracy very fine.

After the most economical cotton to use is determined, the same test made with this cotton and the wool yarn it replaces in the header will give the exact amount of saving effected by using the cotton header.

A somewhat simpler test could be used in order to obtain a quick indication of which of the two cotton yarns is the more economical.

First, weigh the cones of yarn before knitting the section from 14s yarn. Then after the knitting, take the cones down and weigh them again. The yarn used, being the difference between the two weighings, multiplied by the cost per pound of the 14s yarn will be the cost of one 14s yarn header.

By repeating this process with the 20s yarn, you will have the actual cost for yarn in an 18-in. yarn section for comparison.

The statement that more 20s yarn would be used in this fabric is an error. Under all ordinary conditions, less 20s yarn by weight would be used than 14s, assuming that only an 18-in. header would be knitted in each case.

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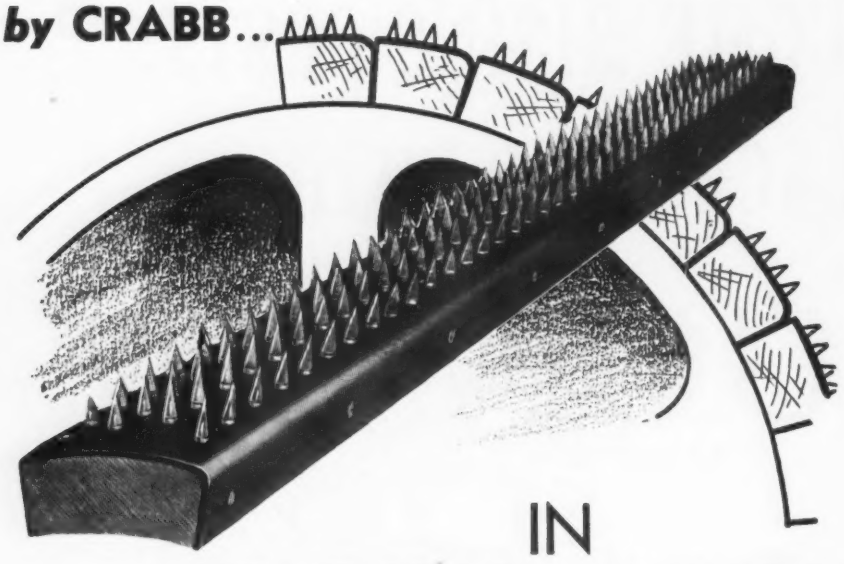

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PINS carried in stock in a wide variety of types and sizes. Immediate delivery on most orders.

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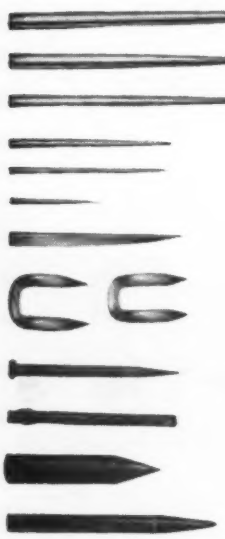

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Japanese Textiles

(*Continued from page 103*)

people, SCAP has not taken corrective steps.

SCAP failures to get hold of the coal and power problems have seriously retarded the rehabilitation of Japan and particularly of Japan's textile industry.

LABOR SITUATION. Labor once was Japan's biggest competitive advantage. While it is impossible yet to predict exactly what the changes in labor's status will bring, the Labor Div. of ESS believes that much of the advantage in the textile industry will be eliminated. The Labor Standards Law (written by SCAP and passed by the Japanese government) is a great omnibus covering regulations on child labor, women workers, labor recruiting, maximum hours, minimum wages, school age, dormitory self-government (over 90% of the textile workers are young girls living in company dormitories), unionization, and mass layoffs.

As yet, there would seem to be little effect of this law. Relatively, textile workers are making less real wages than they made before. Eventually, however, labor costs will rise because of these facts: (1) self-governing dormitories will require more upkeep, (2) higher wages to attract new workers are inevitable (previous hiring of young girls through the father, usually to offset some of his debts, has been eliminated; now only the employee can give consent to work), and (3) effective unionization is a well-known antidote to low wages.

Management is already alerted. For the first time, it is taking an interest in job classification and evaluation. It wants to find out about time and motion study. Its only previous interest in these subjects were: "how long can a worker work before he drops," and "how many calories does a worker need in order to put out the maximum work."

RAW MATERIAL SOURCES. Another former advantage enjoyed by the Japanese industry was its worldwide cotton-buying organization. With its former unlimited credit, Japanese firms could place orders anywhere in the world for cotton and wool. The Japanese bought the most at the lowest price. Defeat completely wiped out this buying pattern. It will be years before it can be renewed.

There will be an inevitable shift in the *where* as well as in the *how* when Japan buys its raw cotton. The United States sold about 1,000,000 bales per year to Japan before the war. In return for this approximately $70,000,-

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Better VALVES

LUNKENHEIMER NEW 200 LB.
BRONZE UNION BONNET GATE

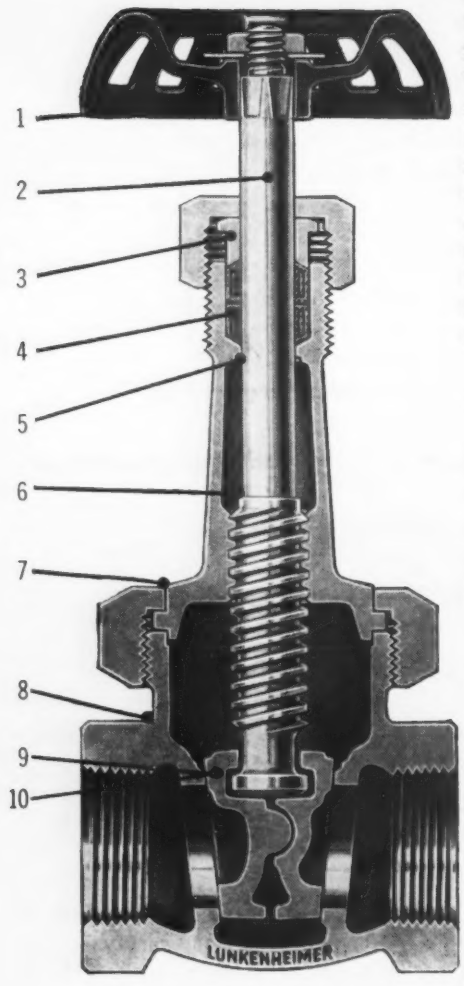

Fig. 2228

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000, the U. S. imported large amounts of raw silk. With the drastic reduction of silk exports to the U. S., it is most unlikely that Japan's purchases of raw cotton will remain as high. "Guesstimates" in Tokyo, place U. S. silk purchases around 10,000,000 to 15,000,000 lb. at maximum per year. With the silk price headed for stabilization near the $2 level, that means only $30,000,000 return to Japan. Japan's cotton purchases, unless some other volume export to dollar areas is possible, must drop to that figure. Increasingly, Japan will seek its cotton supplies from India and Brazil and any other area where soft currencies are acceptable.

T. Sakurada, president of Niishin Cotton Spinning Co., believes that Japan must act more and more along this line. The need, according to him, is for machinery to handle inferior, low-grade cotton.

To balance Japan's economy, annual textile production eventually will have to reach these figures: Cotton yarn, 1,200,000,000 lb.; cotton cloth, 3,300,000,000 yd.; woolen and worsted yarn, 160,000,000 lb.; rayon filament yarn and staple fiber, 500,000,000 lb. This would cover minimum domestic consumption of 2,400,000,000 yd. of textiles; provide exports to pay for imports of raw cotton, raw wool, some rayon pulp and chemicals; and contribute export income to balance most of the $400,000,000 expenditure for food imports.

THE LONG FUTURE. As visualized by SCAP's planners, the individual Japanese would receive 16 yd. of cotton, 9 yd. of rayon, 4 yd. of wool, and 1 yd. of silk fabric. This equals his purchases in the 1930-34 period, with a major 7-yd. shift from silk to rayon.

Japanese textile men, if and when expansion is possible, plan to export a greater proportion of finished goods than previously. Only in this way can Japan obtain the greatest return from the processing of imported materials.

Some have hazarded a guess that, if a suitable cheap rayon is developed for tropical and semi-tropical farm wear, the whole pattern of expansion will be changed. Cotton spindleage might not go above 5,000,000, but expansion in the rayon field would be unlimited.

Approximately 7,000,000 spindles will be needed to carry out the 1,200,000,000 lb. cotton yarn program. Looms to consume this output would number about 350,000.

The over-all plan would require 1,000,000 tons of pig iron and 500,000 tons of rolled steel. At the present rate of production, that is 30 months' output of pig iron and 8 months' output of steel. Only a miracle could

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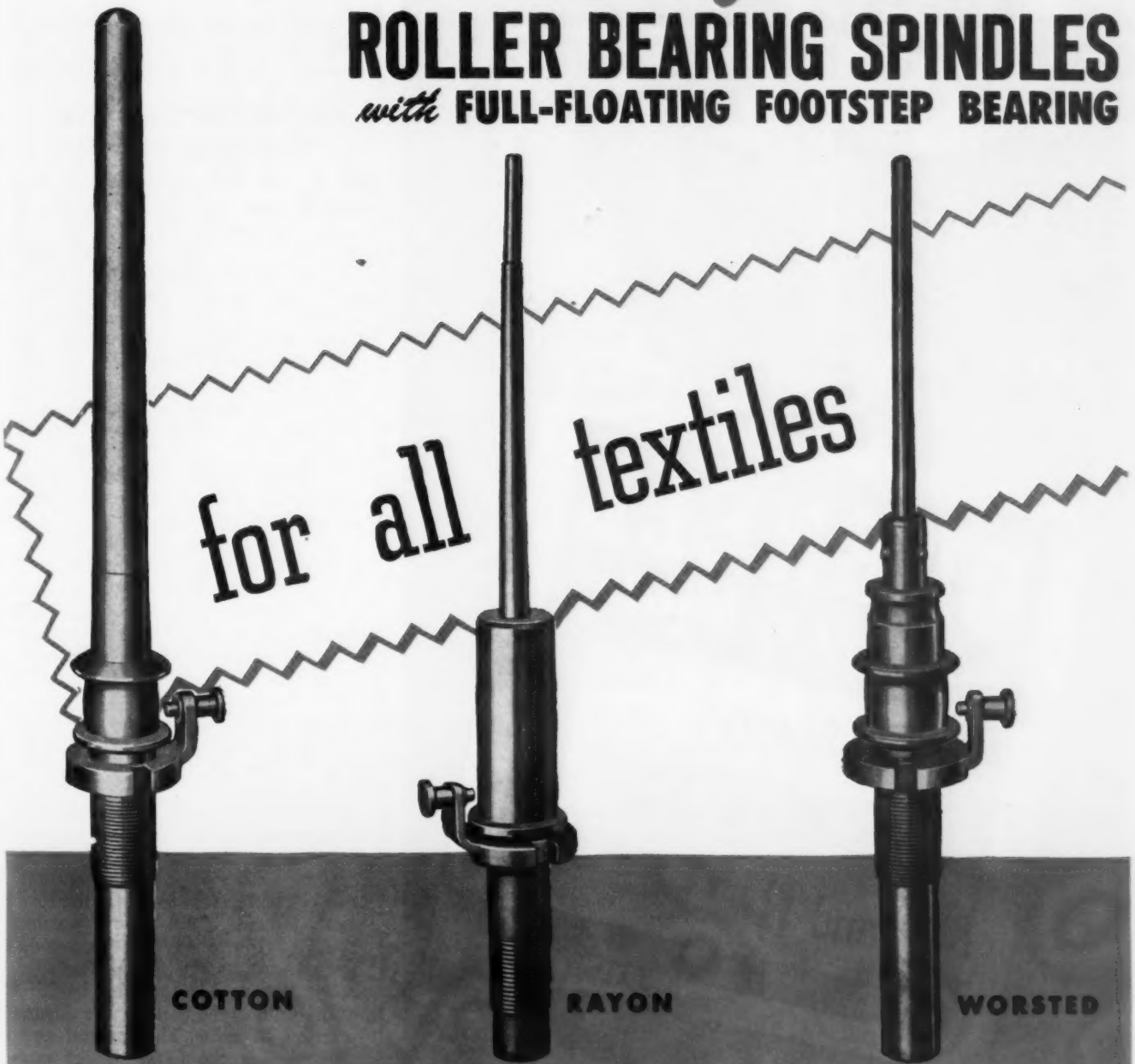
with FULL-FLOATING FOOTSTEP BEARING



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provide the materials to complete this long-term phase before 1958.

There is an undetermined shortage of dyestuffs and chemicals for the textile industry. The interim wool program will call for 3,385 tons of dyestuffs. Sufficient capacity exists or can be repaired to turn out all that the industry wants, but raw materials are short.

Everywhere in Japan there is a cry: No Coal.

Wool-Machinery Survey

(*Continued from page* 117)

to 31s for the average size of yarn usually spun. For the coarsest size of yarn practical to spin, 86% of total establishments with 79% of total spindles use a worsted count of 10s to 19s. For the finest size of yarn practical to spin, 73% of total establishments with 90% of total spindles use a worsted count of 50s to 60s or finer. A tabulation of French spinning establishments classified by yarn sizes spun or practical to spin is given in Table I.

The following is representative of the replies that the mills made regarding their operations of French-system worsted ring spinning.

The average count is 1/28s to 1/30s. The average twist is 12 to 13 turns per inch, the average draft is 8 to 8½ and the maximum draft is 10 for fine stock. The trend is to larger ring diameters and longer traverse. This trend gives a bigger package and increases the amount of power required to drive the machinery, a fact that offsets some of the benefit. The gage is 4½ in. on 200-spindle frames.

BRADFORD SYSTEM. The establishments with Bradford spinning spindles in place are classified in Table II according to the size of yarn spun and the size practical to spin. Of the total establishments, 78% have a worsted count of 15s to 34s for the average size of yarn usually spun. A worsted count of 5s to 14s was listed by 57% of the mills as the coarsest size of yarn practical to spin. The greatest concentration in the finest size of yarn practical to spin is 21% of total establishments with a worsted count of 50s to 59s and 19% with a count of 20s to 24s.

Three questions were asked pertaining to worsted twisting machines. These were:

1. What is the average number of plies you are using?
2. Is the twist generally from a cone or from a single bobbin?
3. What type of package is commonly used or desired?

The replies showed that most

"Boss, did I hear you say you're mighty glad you began using Swift's Soaps in our mill?"
"That's right. There's a Swift Soap that rings the bell for scouring, dyeing or fulling any type of fabric."
"I understand Swift is one of the largest producers of the materials that go into soap. They have what it takes to make quality soaps for *every* textile need."
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for every textile use

Vertex Flakes
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In barrels and bags

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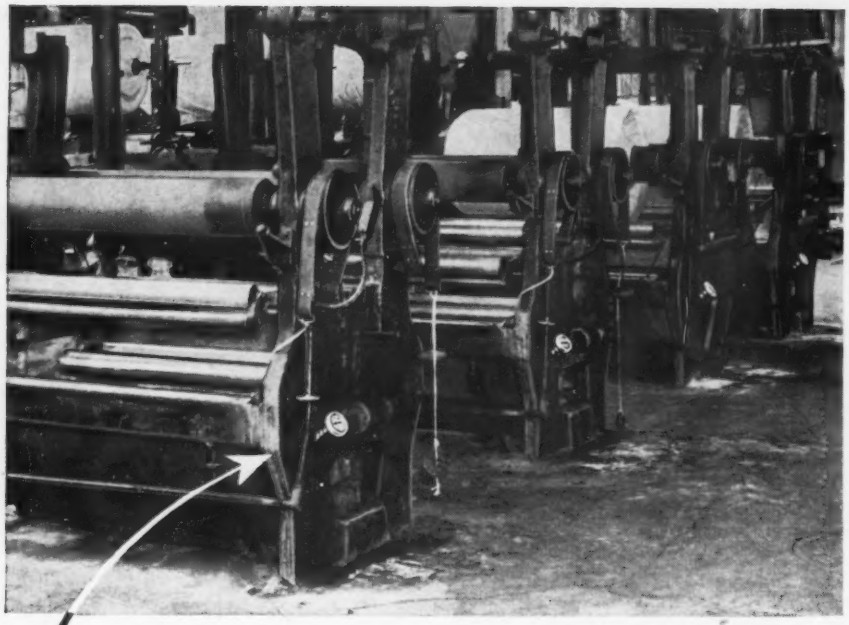

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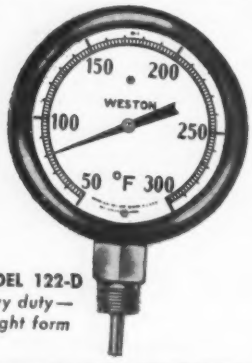

MODEL 122-D
heavy duty—straight form

MODEL 221-D
3" head dia.

worsted mills used two plies. Some worsted mills varied from two to six plies, and carpet mills used six plies. The twist of most worsted companies is generally from single bobbins. A fewer number twist from a 2-ply package or cone, or from single-wound cones or tubes. The cost is much the same for either type of operation, the survey reported. One mill uses a supply package consisting of a parallel tube on which two ends have been wound without twist. Double-ended spools are very commonly used on packages, supply and finished, and should be as large as possible so as to have as few knots as possible.

MULES. A classification of woolen spinning spindles on mules and frames in place, by size and bobbin length, is presented in Table III. Of the total 1,400,000 mule spindles, 967,833, or 71.5%, have a bobbin length from 8 to 8.9 in., the majority of which are 2¼ in. or under in size. Of the total mule spinning spindles, 40,967 were classified as "giant package." Likewise, of the total 4,681 mules, 144 were classified as "giant package." Of the 258,353 woolen spinning spindles in the 1,919 frames, 104,405, or 40.3%, were of the 12-in. bobbin length. Of these, 89,441 were 4½-in. ring or over.

Wool-manufacturing establishments with woolen spinning spindles in place are enumerated and classified according to the size of yarn spun or sizes practical to spin in Table IV. This shows the average size of yarn usually spun and the coarsest and finest sizes of yarn practical to spin. Eighty-seven percent of the wool-spinning establishments usually spin between 1,000 to 5,000 yd. per pound. In the coarsest size of yarn practical to spin, 54% of the establishments use 1,000 to 2,000 yd. per lb. In the finest sizes of yarn practical to spin, there is no similar concentration, but there is a range from 1,000 to 9,000 yd. or more per lb.

Oscillograph

(*Continued from page 119*)

end of the shaft to insert a drive. Whatever method is used, there should be an easy, automatic way of assuring the same relative phase with respect to the crank on every loom. The 'spot' on the Polar-Coordinate Indicator is made to synchronize with the crankshaft at all times, and all timings are made from the top-center position.

"Often the looms are placed so close together that there is little room between the end of one and the next. We think it may be feasible to mount

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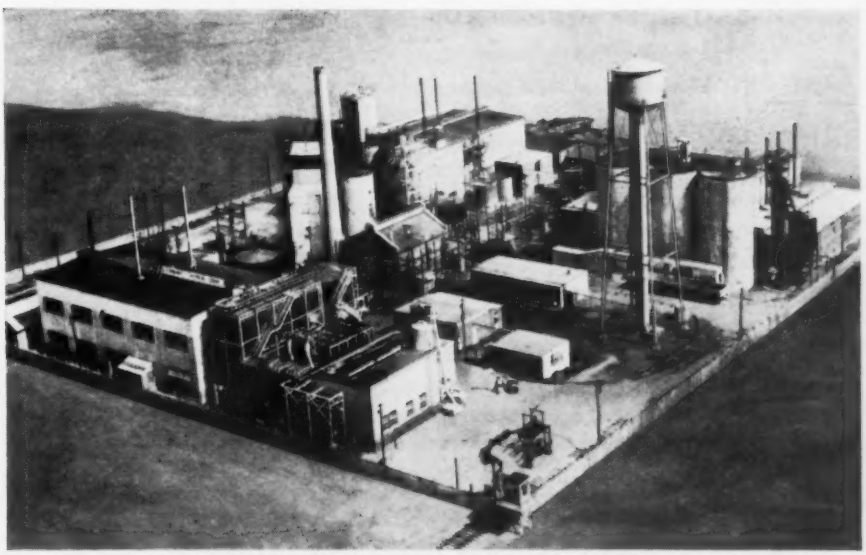
crystal and diamond quality • tankcars, tankwagons, carboys

NITRIC 36° 38° 40° 42° Bé

all strengths—tankwagons, carboys



Plant and Laboratories of the Cornwell Chemical Corporation on the Delaware River, Philadelphia (Cornwells Heights). Key location is hub of Cornwell's water-route and rail distribution system.

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Especially Designed for Textile Mills

IN MODERN, progressive textile mills, where efficiency is the watchword, Tolhurst "Center-Slung" extractors have been acclaimed favorites for years. These sturdily constructed extractors provide high productivity at low cost, combining speed with economy in handling large loads. Tolhurst "Center-Slung" extractors run smoothly even with unbalanced loads, because baskets are free to find their own center of gyration. 40", 48", 60", 72" and 96" basket sizes. For smaller loads, Tolhurst extractors are also available in 20" and 30" diameters. ***Write for illustrated catalogs and prices on these Tolhurst textile extractors.***

Improved **AUTOMATIC TIMER CONTROL**

Makes operation automatic from the time "start" button is pushed to the moment the brake stops the finished load, after predetermined cycle. Standard equipment on 40" and 48" Center-Slung extractors and available at small additional cost on 60" and 72" Center-Slungs. Other Center-Slung features include stainless steel basket, automatic safety cover, and "V" belt motor drive.

LABORATORY SERVICE AVAILABLE

Consult Tolhurst on all extractor problems. Tolhurst maintains a complete staff of experienced engineers with modern research facilities.

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Division of American Machine and Metals, Inc.
EAST MOLINE, ILLINOIS
In Canada: American Machine and Metals (Canada) Ltd.
215 St. James Street West, Montreal 1, P. Q.

the generator on a small dolly carrying a light gear to be meshed with the cam-shaft gear by placing the dolly on the floor under the end of the loom. The phasing would be accomplished by meshing marked teeth on the two gears. However, some looms carry a guard on the cam-shaft gear that would prevent using this method.

"For shedding timing, an index is mounted or a mark is made on the loom so that the probe can be held in such manner that it will give the pip on the screen precisely when the harnesses are level. The timing is recorded as the angle in degrees from the crank at top center.

"For picking timing, the probe is placed near the picker stick fairly low and held where the 'pick' just begins and the angle is recorded. This measurement gives dynamic timing of the pick and is often later than the loom fixer expects from his setting made statically.

The difference of the two points is due to inertia and looseness in the several affecting elements, and is, therefore, some measure of this looseness. The probe may then be placed to give the time when the pick is just finishing. The difference between these two points is the length of time the shuttle takes to start. This measurement is one that cannot be made from static setting and is important since it may measure undue holding of the shuttle in the box or it may be due to looseness of lug straps, etc.

"Each picker stick is given a sharp blow by the shuttle returning from the opposite picker. This blow can be readily timed by holding the probe on the outside of the stick. The time for the shuttle's flight may be calculated, and from this it is known whether the picking power is correct. This is another important factor which is difficult to determine by the usual methods.

"The time of completion of box-motion can be checked by putting an index at the proper places to hold the probe. Various other timings, such as shuttle changes, stop motions, feeler motions, etc. can be timed in similar manner.

"If a variable known-speed time marker is put on the trace, the speed of the loom can be checked at the time of these measurements.

"We are surprised how quickly these readings can be taken on a loom; we think the time is possibly less than 2 to 3 min. per loom. We suggest looking into the possibility of wiring a weave room with multi-strand cable for connecting the probe and the generator, leaving the Polar-Coordinate Indicator in a central laboratory. Outlets could be provided so that several

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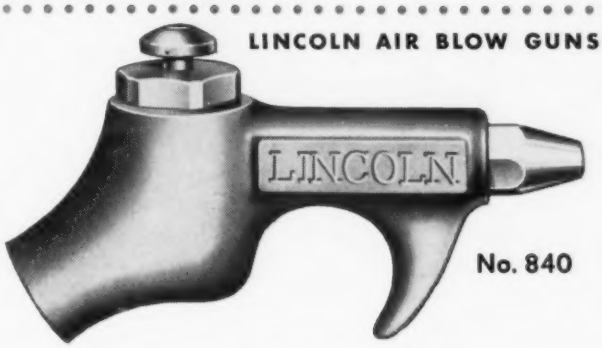
Lincoln Flex-O-Matic Air Couplers, for example, are connected to any air-operated device by a straight push; a slight pull on knurled sleeve disconnects it—cannot be disconnected accidentally. Automatic check-valve shuts off air flow when Coupler is detached. Free swiveling action prevents kinking hose. Large ports permit volume, free flow of air. Couplers are available in three sizes, ¼", ⅜", and ½" pipe thread.

LINCOLN STANDARD Flex-O-Matic Air-Couplers and Nipples

LINCOLN VOLUME Flex-O-Matic Air-Couplers and Nipples

LINCOLN AIR BLOW GUNS



Lincoln Air Blow Guns are light weight, well balanced units for general use where a powerful, directed flow of air is required. Brass check eliminates corrosion. Sealing packing is impervious to deteriorating effects of oil and water. Design of gun permits use in close quarters without kinking Air Hose.

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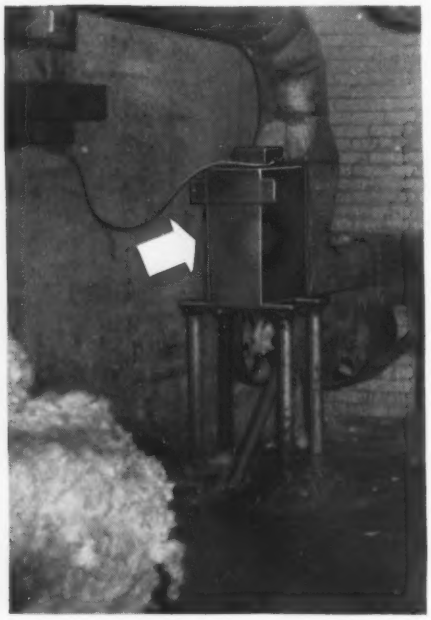

Dings Textile Magnet installed at large southern cotton mill.

It's magnetism. If you install the right magnet to take iron out of cotton, you stand to prevent 3 out of 4 fires occurring in opener-picker rooms.* But, with something you can't personally evaluate, such as magnetism, it pays to get facts before you buy. With magnets you can get very high surface strength or great depth of penetration or a good combination of both. The latter is what you want and what you get with Dings "High Intensity" Electromagnets. With this combination, the magnet will attract iron particles at considerable distance from the magnet face and hold them securely against the face. Let Dings tell you more about it.

Write for BULLETIN 99 and the name of the representative near you.

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"HIGH INTENSITY"

Ask for list of leading mills using Dings Magnets

* Based on insurance records showing 76% of opener-picker fires caused by "foreign substances." Some Dings users report no fires since installation.

looms could be handled from each by means of extension cords."

TO CHECK SPINDLES. "By connecting the Polar-Coordinate Indicator generator by means of a small sleeve," the report continues, "to the top of a roving-frame spindle, the vibration probe shows the gear-an-bearing vibration on each of the spindles in turn. Since all the spindles are geared, phasing on one does for all the others. Bad spindles can be rapidly located and marked. Driving the generator from one spinning-frame spindle does not give synchronization for the others, since the spindles are belt-driven. Nevertheless, the magnitude of the unsynchronized vibration gives an indication of bad spindles.

"We believe that a suitably designed magnetic probe can detect the passages of the steel travelers on the spinning rings; and, if so, speeds can be measured by comparison of the pips on the trace with pips of known frequency.

"We have arranged to drive the generator with a small variable-speed motor and use a light, an aperture, and a photronic cell to give the variation of yarn drawn over the aperture. Changing the speed of the generator changes the scale to which the variation is shown. For higher speed, a shorter-persistence screen should be used. The regular screen is satisfactory for yarn speeds on most of the machines. In a similar manner, a suitable tension-sensitive pick-up can be used to check variation in tension."

10- and 15-Den. Nylon

(*Continued from page 123*)

machine—knitting directly from pirns, with plenty of weight to keep the fabric free of stitch distortion—had to be slowed from 70 courses per min. to 67 courses per min. Sinkers, dividers, needles, and knocking-over bits also had to be maintained in as nearly perfect condition as possible.

HANDLING YARN. One of the important factors in knitting either 10- or 15-den. yarn is that unusual care must be observed in handling the yarn. When pirns are changed, the knitter should touch only the pirn itself. If the yarn is touched with the hand, there will be a tendency of the yarn to stick, patricularly if there is any trace of oil on the knitter's hand. Thus, not only must the knitting itself be done at a slower speed, but also the handling of the yarn must be done more carefully.

Although knitting 15-den. yarn is much easier than knitting 10-den., the same care in handling the yarn and in

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maintaining the machine in good condition must be observed.

Some mills are having their 15-den. yarns sized and twisted with 20 t.p.i. It is thought that the sizing will help eliminate pulls, and the 20 t.p.i. of twist will give additional elasticity to the finished stocking. In many cases, it has been reported, the twist also reduces the sheen that ordinarily is quite evident in 15-den. nylon stockings.

If knitting is done direct from the pirn, some precaution should be taken to prevent press-offs being caused by rough places on the bobbin tops. Only very slight chafing or snagging of the yarn is needed to cause a press off. It is an excellent idea to use a ring of polished wire, as shown in the illustration on page 123, in the end of the bobbin to make the yarn balloon around the end of the bobbin. In this way, the yarn does not come into contact with the bobbin end; and the unavoidable rough places will not damage it.

In order to obtain a good stitch, knocking-over bits must be set as high as possible without cutting. The tension on the fabric at the take-up roll must also be high in order to get a good, clean stitch. Any slackening of the take-up tension will cause the stitches to be distorted.

COURSES PER INCH. Experience seems to indicate that on a 51-gage machine the course count in the gray goods should be about 50 or 51 course per inch. This gray-course count will give a finished stocking with about 53 courses per inch.

Needle oil should be applied to the sinkers and dividers every fourth or fifth set in order to facilitate the shedding of the stitch by the working parts. This practice should reduce the danger of distorted loops, commonly called pinholes.

As much care should be observed in handling the stockings knitted from 10- or 15-den. yarns as is observed in handling the yarns themselves. When the knitter takes the stockings off the machine and puts them on the knitter cabinet, he should handle them by the welts as much as possible. Each knitter should be provided with a good grade of hand lotion and instructed to use it often.

The seaming operation causes more pulls in stockings made of these fine yarns than any other operation in the plant. Of course, the seamer actually handles the stocking more than any other operator; and care must be taken that the seamer keeps her hands in the best condition possible. Her nails should be manicured often and regularly.

Although much attention has been

dyeing — The effective protective surface action of Santomerse No. 1 makes it a desirable additive to dye baths because of its leveling effect. It can be used prior to dyeing to wet out thoroughly and to assist penetration, or can be added directly to the dye bath.

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scouring

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Newsworthy items for textile technologists and production men

JANUARY, 1948

For a Highly Versatile Range of Effects in Body and Stiffness for Cotton, Acetate and Rayon

Onyx Xyno Resin AA40 is a general purpose resin finish offering a wide range of effects in varying degrees of stiffness and body for cotton, rayon and acetate constructions.

This resin dispersion is readily manipulated to give any desired finish from a full, mellow hand to a good stiff body on an unusual variety of fabric constructions. It does not impair luster, and dries to a clear, tough film. Goods are treated in the usual manner, with no need for curing or for high temperatures to set the resin. Moreover, this finish

shows satisfactory resistance to household laundering.

Xyno Resin AA40 is a water dispersion of a thermoplastic synthetic resin. It contains no solvents and is completely stable at all dilutions. Compatible with alkalies, dilute acids and hard water.

For complete data on this resin finish, write for Onyx Technical Bulletin 14-T.

If You Want a Smooth, Firm, Waxy Hand . . .

Onyxsan HSB is another member of the versatile Onyxsan family that deserves your attention. Like all other Onyxsans, it is cation-active, providing a *permanent* finish on cotton, rayon, bemberg and acetate textiles.

Onyxsan HSB is easy to apply in the print washer, jig, quetsch, dye beck or starch mangle, exhausting *into* the fiber to produce its unique effects. An Onyxsan finish is due to changes produced within the yarn, not in any way comparable to the superficial action of surface lubricants.

Although the finish is not as durable on aralac, silk, wool and mixed constructions containing these fibers, Onyxsan HSB is widely used on these textiles for its characteristic waxy finish.

NEW DEVELOPMENTS

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Cationic, Lasting Moth-Proofing with Imularv P or Imularv S deserves your investigation. Either material also imparts outstanding bacteriostatic and fungistatic properties. Imularv P is used in water solution; Imularv S in organic solvents. No. 68

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For Improved Wetting Action in Acid Solutions NSAE Paste has many valuable applications, including more effective acid carbonization of wool and improved leveling of acid colors in wool dyeing. No. 69

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For Added Absorbency in Towelling and Similar Textiles, Phi-O-Sol WA offers interesting possibilities. It provides unusually effective wetting action and complete compatibility with all types of dyeing, bleaching and finishing materials except cation-active agents. No. 70

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Economical, Durable, Easily Applied Water Repellency on cotton-rayon, cotton-acetate and many all-rayon, acetate and nylon constructions is assured by Repel-O-Tex D3 and D4 at a cost no greater than that of ordinary fugitive repellent finishes. No. 71

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A Dry, "Springy" Hand on All Types of Fabrics, particularly nettings in nylon, acetate or rayon, is provided by Onyx Resin S-69, a copolymer resin dispersion of fine particle size. No. 72

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Neutronyx 330 is a non-ionic surface-active agent with exceptional dispersing properties combined with unusually high emulsifying action. It is an excellent detergent due to its wetting action plus solubilizing and emulsifying effects on oils and greases.

Neutronyx 330 has many outstanding applications in textile finishing. It is unequalled as an auxiliary detergent in hard water conditions, due to its non-ionic character. It is particularly useful as a scouring assistant for acetate and rayon. An excellent dispersing and solubilizing agent for acetate colors, Neutronyx 330 also does a highly satisfactory job in dispersing pigments in organic vehicles.

Its non-ionic property makes Neutronyx 330 an effective agent to insure more even exhaustion of anionic or cationic hosiery finishes. It has shown good results in improving wool chlorination in the shrink-proofing operation.

Write for Technical Bulletin 1-T for complete data.

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given to handling the coarser nylon yarns, and practices that insure a high percentage of first-quality stockings have been standardized, mills that go onto 10- and 15-den. stock will have to renew their efforts to obtain better handling. To knit these yarns successfully requires finer control of the yarns in the machines, better maintenance, slower speeds, and much better handling.

Avondale Boiler Room

(*Continued from page 131*)

water is fed and steam exhausted continuously.

Steam from the boilers is metered, and all coal dumped in the pulverizer chutes is weighed, so that a check of the operating efficiency of the system is had for each 24-hr. period.

Feed water used in the system is handled through Zeolite softeners and preheated in an Elliott heater by the exhaust from a steam turbine. If more heat is needed to maintain the feed water at a temperature of approximately 218° F., auxiliary steam is introduced into the heater. One motor-driven pump and one steam-turbine-driven centrifugal pump are used for controlling the supply of feed water.

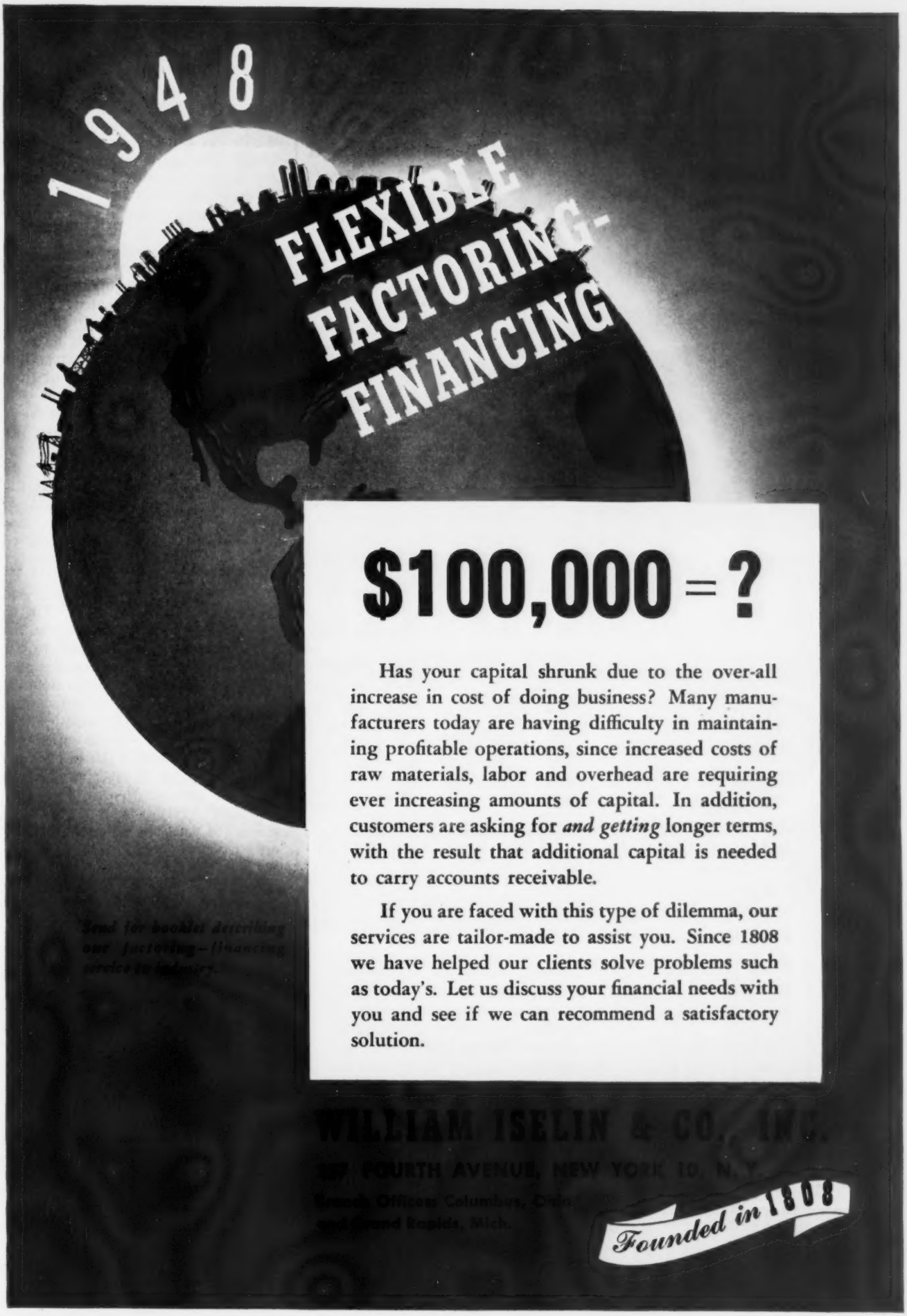
Condensate is returned to a flash tank and then pumped to the Elliott heater.

Heat-Balance

(*Continued from page 125*)

The Rhode Island Worsted Co. has 60 broad looms, 2 narrow looms, and 7,000 twister spindles. In addition, bleaching and finishing operations are performed. Steam is generated at 120 psi. by oil-fired boilers for coil and cabinet dryers, for plant heating, and for direct-contact heating of dye water. In wintertime, the steam load amounts to 12,000 lb. per hr. during the day and 3,000 lb. per hr. at night. In summertime, the steam load amounts to 5,000 lb. per hr. during the day and about 1,200 lb. per hr. at night. The two 300-hp. coal-fired boilers, generating steam at 120 psi. pressure, were converted to oil in September, 1946. The steam generated is utilized by the Rhode Island Worsted Co. and also by the Stafford Printers, Inc., which leases space in the same buildings and purchases steam from the Rhode Island Worsted Co. Printing machines and dryers are operated by Stafford Printers, Inc.

DRAINAGE PRINCIPLE. The specially-designed centrifugal pump of the Cochrane C-B high-pressure conden-



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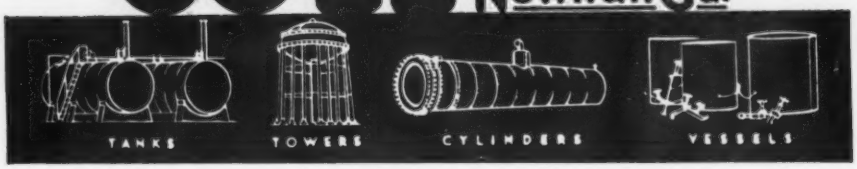

sate-return system draws water from the thermo-fin priming loop and discharges it as a high velocity jet through the jet-pump nozzle. This jet strikes the returned hot condensate and induces condensate flow through the venturi-shaped mixing tube into the thermo-fin priming loop. The additional volume of condensate introduced into the constantly filled loop results in the discharge of an equal volume through the air separator to the boiler.

The hot condensate and entrained air are drawn rapidly and positively from the processing equipment by the jet pump. Air is eliminated from the circuit by passing through the air separator, and the condensate is returned to the boiler at maximum temperature and pressure. Thus, the circuit from the boiler through equipment and back to boiler is completed in a closed system without substantial drop in temperature. Performance of the unit is verified by a comparison of the pressure gage reading at the inlet with the pressure gage reading at the outlet.

SAVINGS. In addition to increased production, boiler feedwater temperature has been increased by 100° F.; and boiler capacity has been increased by 2,000 to 3,000 lb. per hr. This is attributable to the return of condensate at high temperature and to the easing of the boiler load by eliminating the need for heating large amounts of cold feedwater to steam temperature within the boiler. It is estimated that the high-pressure condensate-return system saves roughly 10% on fuel. Prior to the change, coal burned averaged 185 tons per month. Fuel consumption after installation averaged about 165 tons per month. The boilers have since been converted to oil. No maintenance expense has been necessary in conjunction with the C-B system and, in addition, trap maintenance has been materially reduced.

STA Slashing

(*Continued from page 129*)

tion. Tests showed that some beams had as much as 170–180 lb. of water per beam, and from 3 to 17 beams were usually in each set. Because of the excess water in beam-dyed beams, insufficient anchor or penetration was obtained. The size did not adhere well to the yarn; and the excess water was squeezed out by the roll into the size box, thus further complicating the slashing operation. As a result, when the yarn passed over the cylinders it did not dry properly; and, when heated enough, it frequently overbaked.

Several methods were used by the

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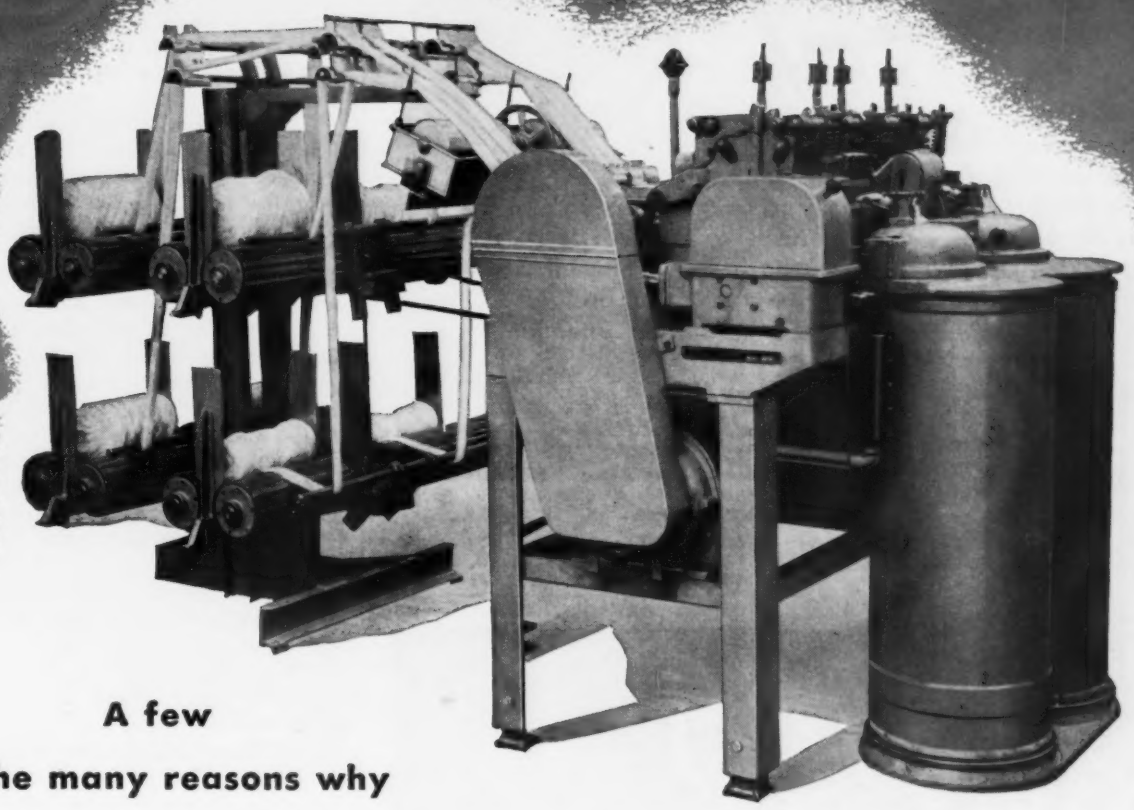

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- *The final result? Increased efficiency of spin—better cloth!*

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HENRY H. HERSEY, Greenville, S. C.
HARRIS MANUFACTURING CO., Atlanta, Ga.

Sterling Ring Travelers

A NEW YEAR

With more or renewed frames, rings, etc., in place, now is the time to check on your Ring Travelers.

Are they doing their part to keep production up and ultimate costs down?

CHECK WITH STERLING.

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M. H. CRANFORD — Box 204, Chester, S. C.
D. R. IVESTER — Box 882, Clarkesville, Ga.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

mill to improve the conditions: (1) it installed constant-level devices in size boxes; (2) it changed to a heavier size in order to offset the extra accumulation of water coming from the beams themselves; (3) it dumped the size after the fourth beam, since it considered the improved weaving quality of the warps as more than paying for the extra size used; (4) other methods were employed to improve operation, such as use of 62-in., 18-oz. wool blankets on squeeze rolls and slowing down of slasher speed.

As a result of these measures, present mill tests show improved penetration of size which is now averaging 5% on the yarn; 7 to 8% moisture is left in the loom beams after slashing. However, the slashing of beam-dyed beams is still much more of a problem than that of undyed beams.

LARGER-PACKAGE FILLING. No major loom changes were reported from Rosemary Mfg. Co. installation of the large-package shuttle and quill. These shuttles have the eyes moved forward to take care of an 8¾-in. quill instead of the former 8-in. quill. The increase in amount of yarn on the filling package is 15%. According to the experience of the mill, yarn numbers from 4s to 30s may be put on 8¾ in. quill.

A special shuttle known as the LFP shuttle made by Southern Shuttles, Inc., Greenville, S. C., was shown at the meeting; and it was reported that some mills had increased the amount of filling yarn on the package by about 30% with the use of this shuttle. The over-all length of the shuttle is 16 in. rather than the former 15¾ in., and the eye has been moved forward.

REDUCE WARP BREAKS. How to reduce warp breaks on the loom was discussed. One mill reported that the timing of the loom was the important factor and that the elimination of strain on the warp was desirable. However, the position of the warp that represented the least strain—a straight line from the whip roll to the fell of the cloth—was a physical impossibility due to the necessity for raising the whip roll to effect a good cover for the cloth and for other reasons. Fundamental factors of loom timing were stressed. It was pointed out that, if the harnesses were level at 2 in. from the surface of the warp, the strain on the warp was less than if the harnesses were level at 3 in. from the surface of the warp. Timing of the harnesses so that baggy cloth does not result and timing of the picking cam to remove the strain on the shuttle when it is driven through a closing or closed shed were other points made in reference to the reduction of warp breaks at the loom.

Rayon Reports

Published by the American Viscose Corporation, New York, N. Y. January, 1948

One of the characteristics of Avisco crimped staple is its cohesive quality as demonstrated by the web pictured. The web, held by employees at the Nitro plant, comes from the doffer cylinder of the carding machine.

Expanding AVC Plant at Meadville, Pa., Will Boost Acetate Capacity

With construction 90% completed on new buildings and equipment for the acetate rayon plant of American Viscose Corporation at Meadville, Pa., the company has announced that the plant's capacity will be increased during 1948 to an extent totalling 40% by the end of the year.

The new buildings, which will add nearly seven acres of floor space to the present 25, include four concrete silos for storing up to 2,000,000 pounds of dry cellulose acetate, a spray tower, a three-story dissolving and filtering structure, a huge one-story spinning room and a one-story processing room. Major corridors in the buildings will total a half mile in length, one corridor alone being 1,183 feet long.

Main corridor of the expanded Meadville plant. It is nearly a quarter of a mile long.

"Winning More Friends for Rayon"

How AVC's Consumer Service Program has reached millions of people through radio, publicity and leaflets for schools and women's clubs is graphically set forth in a folder now available. Designed to support the distribution of rayon merchandise by telling how to buy, use and care for it, the Consumer Service Program is of direct benefit to all who manufacture, distribute and sell rayon products. Copies of the folder entitled "Winning More Friends for Rayon" will be sent on request.

VISCOSE CALENDAR AVAILABLE

A limited number of illustrated wall calendars for 1948, published by American Viscose Corporation, are still available on request. Scenic views and a number of interesting uses of rayon and cellophane are pictured.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

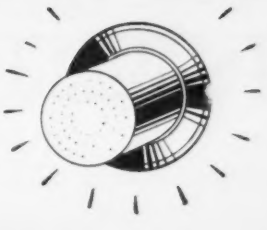
America's largest producer of rayon

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Cleveland, Ohio; Philadelphia, Pa.; Providence, R. I.

RAYON 20 YEARS AGO

NEW YORK, Jan. 1928—American Viscose rayon production for 1927 reached an all-time high of 40,960,000 pounds.

MANCHESTER, ENG. Jan. 1928—New yarns and fabrics are envisioned with a new fiber—rayon staple—recently patented here.



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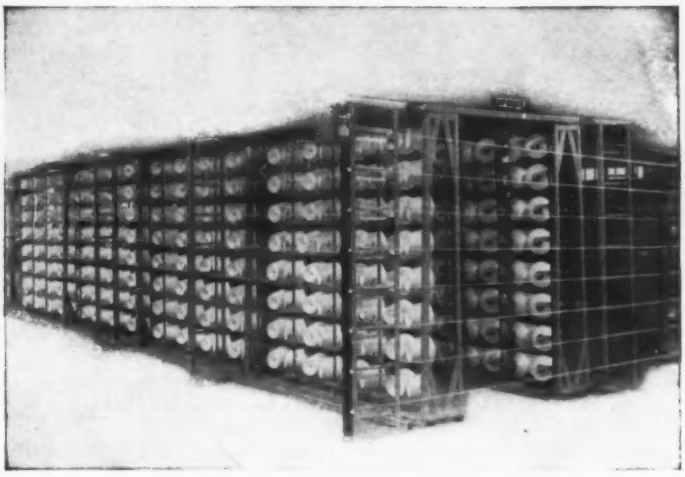
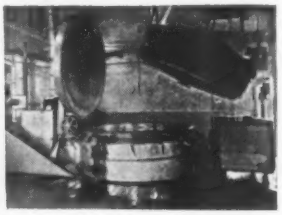
CREELS FOR EVERY PURPOSE



"TYPE RM" MAGAZINE CREEL
All Welded Steel Construction
Indestructible Double Light Indicator
Simplified Fool-Proof Electronic Stop Motion
Exclusive Self-Locating Swinging Spindle Arms (Pat. Applied For).
Each Creel Is Made in Sections Completely Assembled in Our Shops,
So There Is a Minimum Amount of Labor Required for Installation.
EDWARD J. McBRIDE
Adams Avenue and Leiper Street — Philadelphia, Pennsylvania — Phone Jefferson 5-8622

The Fleet Line
STAINLESS STEEL STOCK DYE KETTLE
Patent Numbers 2410214, 2275818 and 1813784



50 lbs. Capacity 1,000 lbs. Capacity

In Sizes To Meet Your Production Requirements

Fleet Line Stainless Steel Stock Dye Kettles are made with normal rated capacities of 50 lbs., 250 lbs., 500 lbs., and 1,000 lbs. Each size may be loaded 50% under capacity, or considerably over capacity, on certain types of stock, without loss of efficiency.

Only with Fleet Line Stock Dye Kettles can you get ALL of these features, for many of them are protected by patents.

ADVANTAGES

1. Stock undisturbed in kettle. Comes out in open, lofty condition.
2. Complete and uniform penetration of dye liquor.
3. Stock unloaded in cake form on false bottom, by electric or air hoist.
4. Temperature, pressure and depth indicators.
5. Safety sampling cover. Will not open when machine is in operation.
6. Unit construction keeps outside pipes and fittings to minimum.
7. Vertical pump requires no packing.
8. Vertical motor on top of machine away from water and dirt.

RIGGS AND LOMBARD
FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

Handling Resins

(*Continued from page 133*)

tive chemical compounds which tend to polymerize continuously until the products have become completely insoluble.

The type of urea-formaldehyde resin which has been used in large volume over the years for creaseproofing rayon has a normal life expectancy at 70° F. of about six weeks. At higher temperatures this is cut down sharply; and yet there is one case, which is a matter of record, where a carload of this material was kept in cool storage at 40° to 50° F. for over a year. At the end of that time, the resin was in perfect condition and was used successfully. On the other hand, a methylated melamine-formaldehyde resin, such as Aerotex Resin M-3, in the form of an 80% water solution may be stored at 70° F. for six months, without change. Much of the production is stable for over 12 months under these same conditions. However, when storage temperatures are raised to 100° F. or 120° F., the stability is cut down to a matter of weeks. At 50° F., the indications are that this particular type could be kept almost indefinitely without change.

THERMOPLASTIC RESINS. The thermoplastic resins for textile usage are generally offered in the form of an emulsion or dispersion, since, as produced in a chemical manufacturing plant, they are not water soluble. However, when dispersed to a particle size smaller than 1/25,000 of an inch, they may be readily deposited on textile fibers. While some of these emulsions, as is true of milk, are not completely destroyed by freezing, nevertheless it is desirable in all cases to keep them above 32° F. Most of them, however, as is also true in the case of milk, will deteriorate rapidly if stored at elevated temperatures. Fortunately, however, the man-made emulsions are superior to nature's product in this respect and, if handled under proper storage conditions, will remain stable for many months at 70° F.

In general, chemical manufacturers make it a point to furnish the mills with all of the available information which they have at their command, not only on the processing characteristics of their products, but also on their stability in storage. They are also extremely careful to make certain that the products shipped from the manufacturing plant are fully up to specification. Furthermore, considerable pains are taken to insure that no types are offered for sale unless they have a minimum stability which will

OLATE COMPLETES THIS FULLING "TRIPLE PLAY" WITH PRECISION

Fast wetting out . . . excellent lubrication . . . thorough emulsification of oil and dirt . . . this triple-play fulling job is one which Olate handles with exceptional efficiency.

1 Wets Out Thoroughly and Quickly

Olate's extremely low titer assures fluid solutions which penetrate fibers quickly and evenly . . . eliminate dry spots . . . guard against uneven fulling and non-uniform felting.

2 Lubricates and Softens

Fluid Olate solutions soften the fabric quickly, too. No uneven lubrication to cause uneven shrinkage and poor coverage when Olate is on the job.

3 Emulsifies Oil and Dirt

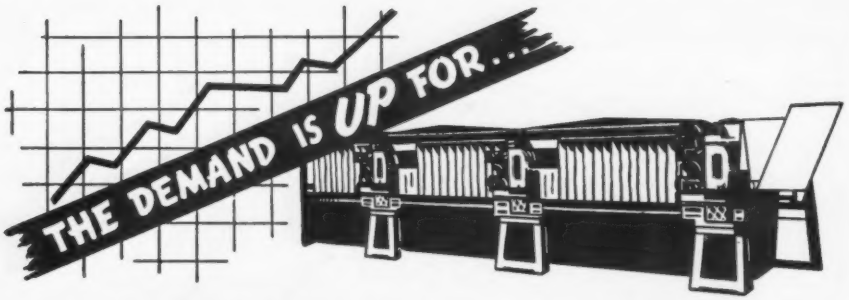
Dirt and oil are loosened quickly and emulsified thoroughly when Olate goes to work. Dirt is held in suspension until it is ready to be flushed away during the scouring operation.

Olate can save you time, steam, and manpower in your fulling and scouring operations. Olate-processed woolens *look* better . . . *feel* better. Prove it with a month's trial.

Olate

Procter & Gamble

safe and efficient for every textile soap usage



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EASY TO USE - SUDS BETTER

Demand of the textile industry is up for Drummond Soap Flakes! And no wonder. These easy to use and quick sudsing flakes possess the same formula features of Drummond Soap—well known in the industry for years.

Now you have your choice, Drummond Soap Flakes — or Solid Drummond Soap!

Both have the advantages of high body and low alkali content — advantages that leave fabrics clean with a downier feel, brighter colors, and whiter whites. Try a sample and note the difference.

Write today for your FREE working sample of Drummond Soap — just ask for Flakes or Solid.

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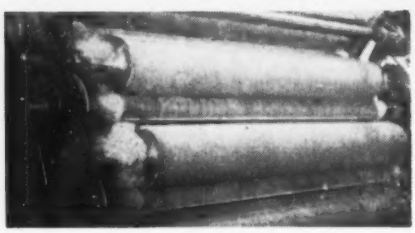

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IT'S BOOTH for all these advantages in card clothing:

★ FIRM FOUNDATION—preventing wire from losing pitch

★ FLEXIBLE—reducing possibility of "shelling out"

★ AVAILABLE—with rehardened points if specified.

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For Mercerizing

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The mercerizing penetrant which is water soluble

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Faster Penetration
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result in satisfactory service in the field. To insure a profitable experience with these products which have created new horizons in the production of textile fabrics, it is only necessary that the users follow this simple formula.

a. Test on receipt.

b. Institute inventory control and follow the principle of first in stock, first out.

c. Store in cool storage.

STA Carding

(*Continued from page 137*)

on 10 yd. from each type roll covering revealed 2% more variation on the cork rolls than on the synthetic.

The new nylon bolsters came under discussion next. S.P.V. Desmond, of Watson & Desmond, Charlotte, N. C., manufacturers of the nylon bolster [T. W., Sept., 1947, p. 169] declared that the lower frictional drag in the nylon bolster will cause it to run cooler, without apparent wear on either the bolster or spindle. He stated that the bolsters had run as long as nine weeks without oiling, and that none had been in use long enough for one to wear out. Some have been burned out in mill tests after running without oil for 11 weeks, Mr. Desmond said. Savings of 11% of power at 9,000 rpm., and 13% of power at 11,000 rpm. have been reported.

When asked to discuss ball-bearing top rolls [T. W. Sept., 1947, p. 169], Mr. Desmond pointed out that the bearing cannot be taken apart; and that the lubrication is sealed in. Two bearings in each shell carry the entire load and are so located as to prevent cantilever effect, he said. The rolls can be covered with any material in the same way as regular rolls.

Chairman Marley added that Erwin mills has had 14 sets of these rolls running since June without added lubrication. They are cork covered; and while some things have happened to the covering, the rolls were still going strong.

The final discussion covered mechanical roll pickers. Virgil McDowell, assistant superintendent, Rosemary Mfg. Co., Roanoke Rapids, N. C., stated that his mill had the pneumatically operated type in the carding and spinning departments. He said that they had many advantages over hand picking, the main one being that they cleaned the bottom rolls so well. Weekly cleaning of both top and steel rolls at the Rosemary mill prevented chokes around the roll necks; and they are used on both conventional and long-draft frames, Mr. McDowell stated. One hand can pick 24 sides in 8 hr., he continued, and

BRINGING PROBLEMS TO LIGHT

The eyes of Corn Products technicians, at our textile laboratory in Greenville, S. C., see many textile problems. Their experience and knowledge, backed by complete facilities, answer these problems to the profitable satisfaction of many textile manufacturers.

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DYEING

Accurate skein dyeing of Acetate yarns under laboratory control.

- **FAST COLORS**
- **EXACT MATCHES**
- **QUICK DELIVERY**

For good service and exact color matching write, phone or wire —

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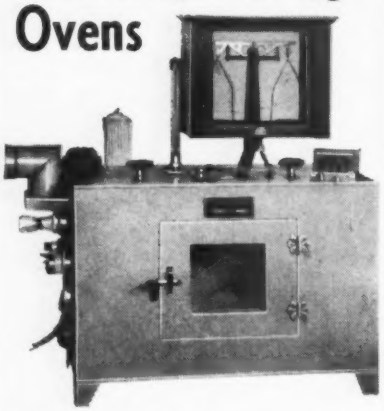
Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼", both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work.

Write for details on EMERSON OVENS to fit your process.

•

EMERSON APPARATUS CO.
177 Tremont St., Melrose 76, Mass.

can do a much better job of cleaning both top and bottom rolls than by hand methods. After picking, the hose is disconnected and hung on a special rack. The picker is disconnected and put away.

The question was asked, "Do you use the same type of picker in the card room as in the spinning room?"

Mr. McDowell replied that a type with lower air pressure was used successfully in the card room. There is less vibration in this type, and it runs better, he added.

In reply to other questions, Mr. McDowell stated that the frames at Rosemary mill were picked both while running and while standing. Persons other than the spinner are used to do the picking. It was not necessary to oil more frequently, he added. Cleaner yarn results from use of the picker, because lint which absorbs grease is not allowed to accumulate on the bottom roll.

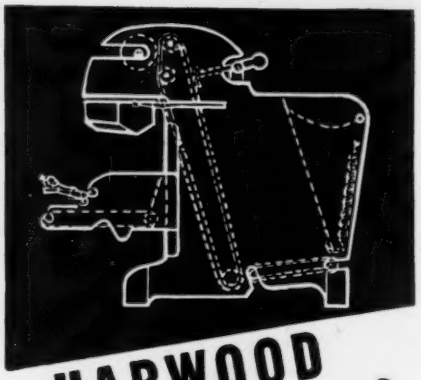
New Dyes and Chemicals

(*Continued from page 152*)

print paste is good, and the shade develops completely in acid ageing. The dye is suitable for the printing of fabrics which are to be given an imitation seersucker effect, as its shade is not affected by overprinting with caustic soda.

INDANTHRENE RED VIOLET RHA PASTE FOR DYEING—a straight vat dye specially standardized for dyeing purposes. The product is particularly suited for dyeing cotton and rayon piece goods according to the pigment-pad process, or for dyeing cotton and rayon yarns in skein or package form. The paste yields bright reddish shades of violet possessing very good fastness to washing and to chlorine and good fastness to light in medium shades. Indanthrene red violet RHA paste for dyeing is best applied in reduced dyeing according to a special IN process and in pigment pad-jig dyeing by padding as usual and reducing at 160° to 170° F.

RAPIDOGEN BLUE PBN — an azoic compound soluble in caustic soda which, after printing and acid ageing, develops in the form of an insoluble pigment possessing good fastness. When printed on cotton or rayon fabrics, the dye produces in heavy and light concentrations desirable shades with good fastness to washing and fairly good fastness to light and chlorine. Rapidogen blue PBN has the additional advantage that when printed in light shades, it is not subject to variations in shade when soaped at the boil in rope form or in high-speed open soaping. The



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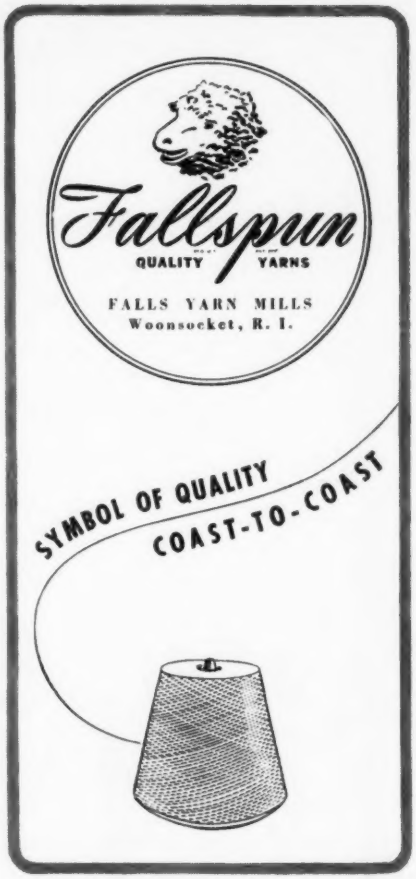
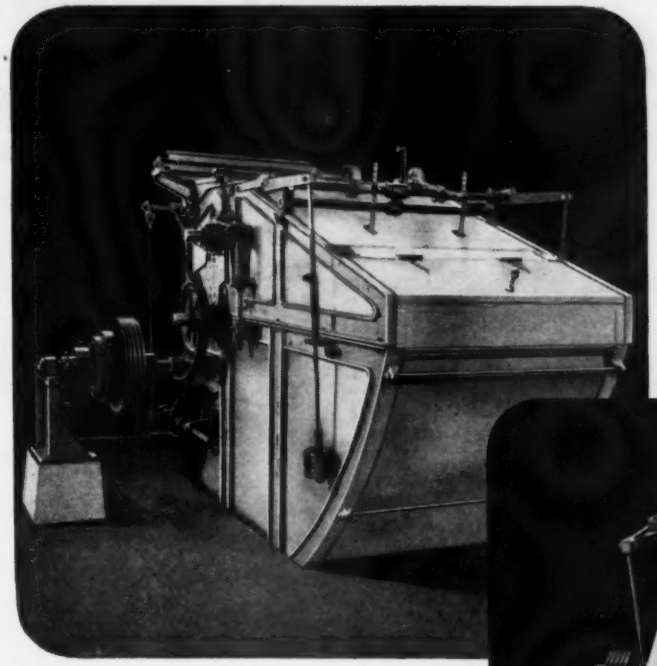
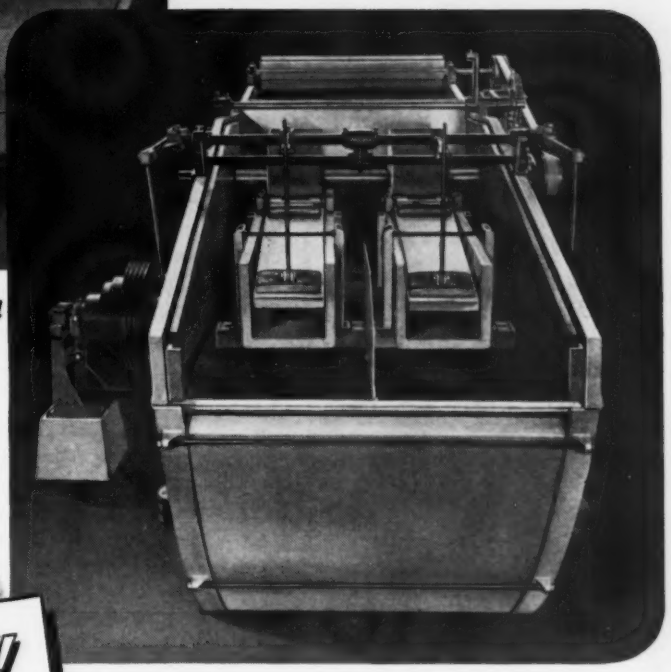






Hunter No. 21 Stainless Steel Fulling Mill

"WHITES"

. . . NEED SPECIAL HANDLING
. . . NEED HUNTER FULLING

Because "whites" need extra care in handling and fulling, need insurance that dirt will not be present in the fulling mill Hunter has designed the No. 21 Stainless Steel Fulling Mill which has clean, gleaming stainless steel at every critical point. The entire body of the mill as well as the doors are fabricated from heavy gauge stainless steel. The sectional rubber rolls are mounted on stainless steel shafts. Crimping boxes, stop motions, soap boxes and unloading roll are all of stainless steel.

Nor have mechanical details been overlooked. Power is supplied through a V-belt drive, all shafting runs in roller bearings, top roll tension is pneumatically controlled and Alemite Zerk lubrication points are provided where necessary.

It will pay you to get full information on these special fulling mills which have been so enthusiastically received.

WRITE FOR FULL INFORMATION

JAMES HUNTER MACHINE CO., NORTH ADAMS, MASS.

Founded *1847*

product is applied in the usual manner for Rapidogen colors. The stability in the print paste is good, and the shade develops completely in acid ageing. When dissolved with developer base RNA or RPN in place of caustic soda, Rapidogen blue PBN develops satisfactorily in neutral ageing and can be printed alongside vat colors.

Opening-Picking

(*Continued from page 111*)

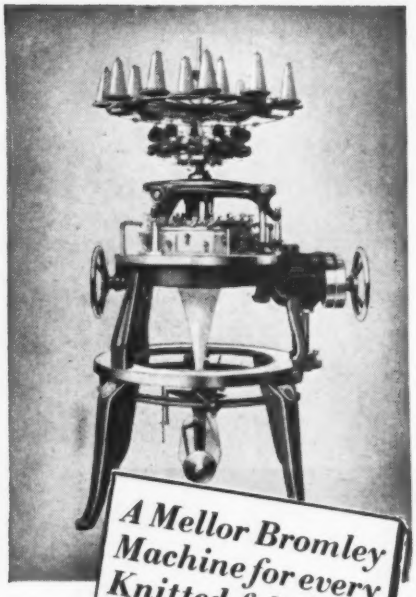
counts is as follows: 350 to 450 lb. per feeder-hr., from blending feeders; 1,400 to 1,600 lb. per hr., from vertical openers; 1,500 to 1,700 lb. per hr., from Buckley openers.

PICKER LAPS. There are many factors affecting picker-lap quality to be controlled in the operation of a modern picker room. Damage to staple, difficult to detect unless the injury is serious, is an almost ever-present source of low yarn-strength. Staple injury is most frequently caused by excessive beats per inch, poor condition of beaters, or incorrect setting of the beater to feed roll, grid bars, or cut-off plate.

The older picker organization on three-process pickers called for beats per inch as high as 150. In many cases, this was excessive beating which did irreparable damage to the staple. Many successful modern mills reduce the beats per inch to a total of 60, with marked increases in yarn strength. To detect the injurious effects of excessive beats per inch, reduce beats about 20% and test the yarn strength from a few laps. If yarn strength improvement is observed, reduce the beats per inch by an additional 10%, and repeat the test for yarn strength. If another improvement results, reduce them again until the minimum number of beats per inch is found that will produce a sufficiently clean and smoothly opened lap.

Another fundamental often overlooked is the effect of the type of beater on the quality of lap delivered. A combination of beaters that is most effective in cleaning with minimum beats per inch is as follows: Buckley beater in the first section, two-blade beater in the second section, and carding beater in the finisher section. The arrangement of these beaters delivers a lap that permits the lickerin of the card to act more effectively in removing the small particles of leaf and seed fragments.

IMPROVED WEIGHTS. Since variations in lap weights mean variations in yarn numbers, the mill's entire sys-



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PROGRESSIVE TUBING MACHINE

FOR ALL TYPES OF RAYON, COTTON and MIXED FABRICS

PROGRESSIVE'S new Tubing Machine will handle rolls up to 28 in. in diameter in standard models and up to 36 in. if specified. Features include heavy duty steel construction . . . individual motor . . . V-belt drive . . . linkage and operating-part castings of bronze. Many other features likewise contribute to give you a machine offering maximum performance results with minimum costs for installation and maintenance.

WRITE TODAY FOR FULL DETAILS

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Describes 16 money-saving processes using PQ Silicates. The most complete reference on silicates for textiles, continuous bleaching, scouring wools, cottons, rayons.

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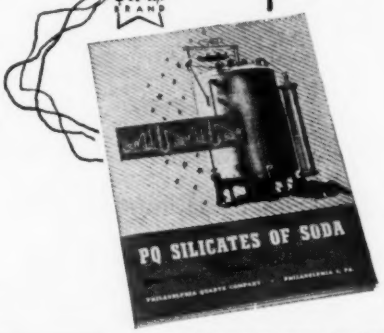

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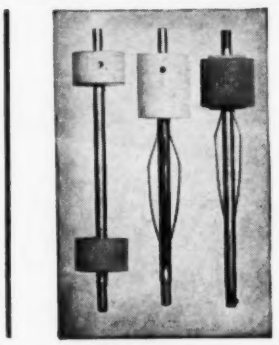

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Hard fibre tips for all types of spindles —require no oiling—renewable at little cost. Use them for cleaner yarn and better wound bobbins. Write for sample of these and other Wayne money-saving textile machine parts and supplies.

Spindles of all types. Wood, head, steel head, cork covered heads and hardened steel top tip spindles. Let us send you a sample of the type you prefer. Save money by buying from Wayne.

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General

These Wonder Working Machines Will Do Everything, Everywhere For All Types of Floors, Faster at Lower Costs.

Precision-Built *Generals* will save and protect your new floors, rejuvenate your old floors, enhance the appearance of your building interiors. They eliminate the necessity for all old fashioned hand labor by performing any of your floor maintenance operations better and at a fraction of your present costs.

GENERALS are built rugged for heavy duty day-in, day-out operation and at negligible operating costs. They are engineered and built by a company whose reputation for precision is inter-nationally known. The name *GENERAL* is your assurance of quality and honest engineering.

GENERAL Floor Machines are used by leading industries, offices, public buildings, hotels, recreation centers, schools, colleges, hospitals and institutions, all over the world.

MODEL "K"

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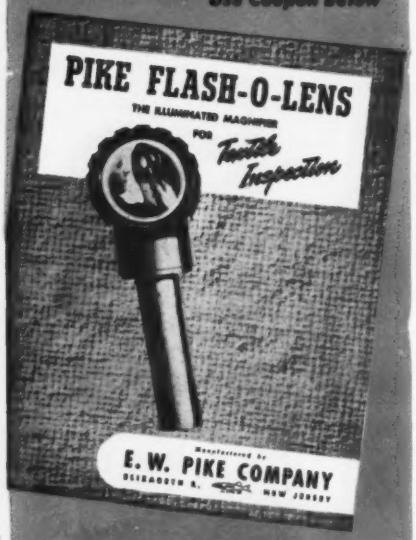

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tem of weight control is predicated upon a sound method of checking and controlling the original lap yard-weights at the picker. Briefly put, the "how" in this matter of lap-weight control in the modern mill comes from the substitution of the automatic lap-meter for the yard gate in measuring and weighing the laps.

There are other factors of the lap-weight problem. While humidity control is desirable, it is difficult to obtain without recirculating air filters because of the large amount of air drawn from the room by the picker fans and discharged by them into the dust cellar. For this reason, more mills are going into filter possibilities for air control as well as into processing opportunities.

A minimum requirement in the picker room, as far as atmosphere and weights are concerned, is the correction of picker-lap weights to moisture regain. Direct-reading, lap-weight indicators are in general use at the present time, and their weights must be corrected for the humidity prevailing in the picker room at the time of weighing.

Another source of poor yarn weights develops at the card but is caused by carelessness or ignorance in the picker room. The "licking" of one layer of picker lap to the next layer while the lap is being unwound from the card lap-roll is frequent cause of light and heavy yarn-numbers. It can be prevented by proper adjustment of the air currents on the picker cages, correct setting of the split-lap preventer, and avoidance of an excessive amount of re-worked waste in the mix.

OIL SPRAY. Oil spray is discussed under pickers because of its over-all benefits to opening and picking, as well as its advantages in carding and other processes. Possibly the most obvious result of oil spray is the relatively clean and dust-free condition of opening, picking, and carding departments. The spraying can be done in the finisher-beater chamber under air pressure; or the new capillary wipe-bar can be used and no air pressure is required. Spray installations have been made at different points in the conveyor pipe from either the feeder or the vertical opener.

One of the simplest and most effective methods is the use of a controlled spray head in each opener feeder with the oil supplied by individual pump connected to the apron drive on each feeder. These pumps operate only when the feeders are delivering stock.

There are many advantages in spraying the oil on the stock at the first process: (1) Opening and picking rooms are much freer from dust and fly; (2) finer dust is more easily removed from the cotton; (3) oiled stock is more thoroughly mixed with possibly unoiled stock, and thus the oil is more evenly distributed by contact; (4) less equipment is required, and control is easier; (5) there is neither leakage nor waste accumulation in the beater chambers.

Many comparative waste tests show the following results with respect to oiled stock:

1. There is a slight increase in dust and small-leaf waste removed from the feeders, accompanied by a small increase in card-lickerin waste, and a decrease of 0.5 to 1.0% in total card waste. Less fly, strips, and invisible loss account for the over-all decrease in card waste.
2. Some additional cleaning, though slight, is required on machines where oil is applied, such as feed aprons and beater chambers.
3. There is no loading of the card cylinder, doffer, or flats when the amount of oil applied is kept to 0.3% or less, based upon the weight of stock fed.
4. With oiled stock, there is slightly less clearer-waste on drawing frames and slubbers, less roll-lapping on drawing, less of a tendency for drawing sliver to dry out over the week-end, and more freedom from static. Draw-frame sizings are also affected less by the changes in relative humidity.
5. Roving and yarn sizes are slightly heavier, but more uniform. There are no observable effects on roving or spinning end-breakage, yarn skein-strength, bleaching, dyeing, or finishing of woven cloth.

Cake Drying

(*Continued from page 115*)

The only drying processes which produce results superior to h.f. drying are vacuum drying and skein drying. Either of these processes will reduce shrinkage variation to 0.25%.

Vacuum drying is a batch process requiring 6 to 8 days, the disadvantages of which are obvious. Skein drying in ovens takes as long as cake drying; requires more oven space; and produces more ends with resultant trouble in subsequent operations.

High-frequency cake drying results in improved creeling or winding. Since the cakes rest undisturbed in their natural vertical position and circular form on a moving belt during the drying operation, rather than hanging flat on hooks, less tangled yarn and fewer broken ends result.

Another advantage of h.f. drying is less discoloration due to charring. Oxidation of the yarn is the same or less

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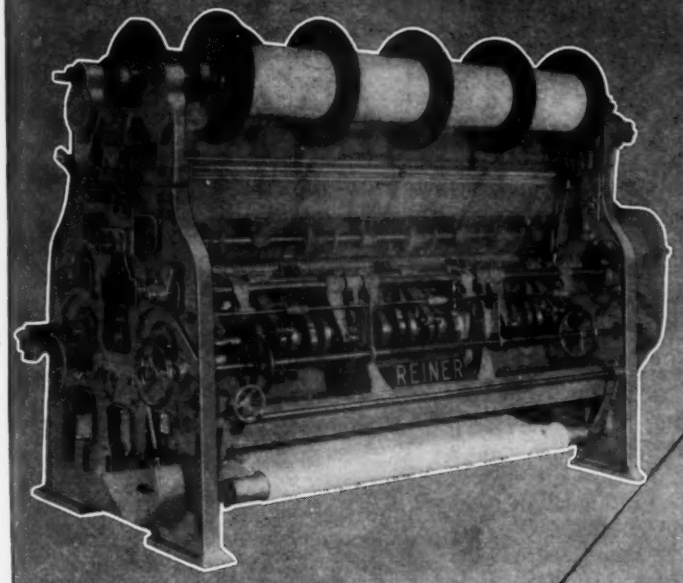

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than that resulting from oven drying. Oven drying for 96 hr. at 135° F. produces an oxidation number of 1.0. Although in h.f. drying the yarn temperature may be carried to 220° F. or even higher, because of the extremely short period of exposure, the oxidation number has been found to be only 1.0 or less.

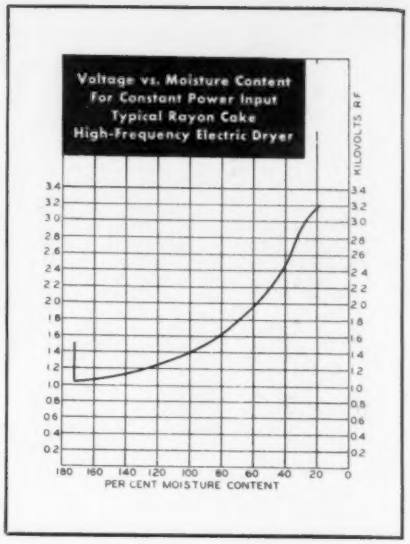
Similarly, h.f. drying produces the same or even higher tensile strengths than oven drying. Because of the short drying cycle, there is less deterioration of the yarn than is caused by exposure to the lower oven temperatures for several days.

High-frequency drying, properly controlled, produces markedly less migration of oils, tints, and sizes. This is especially important to throwsters and dyers. There is an obvious reduction in oxidation and deterioration of dyes. The change in shade of even very sensitive small-particle-size dyes is so slight that it is not apparent to ordinary visual inspection.

DRYING ACTION. There are interesting differences among the various drying processes. Normal drying in a heated ambient atmosphere depends to a very large extent upon capillary forces to move the moisture from the interior of the material to the surface. As water evaporates from the surface, the vapor pressure is depressed at terminals of the pore structure, which draws more moisture from the region of higher vapor pressure inside to replace it. Evaporation from the surface is apt to proceed more rapidly than the migration of moisture from inside, which results in sealing up the pore terminals, causing a sort of casehardening in many materials. This not only slows up the drying but results in a zone near the surface in which dye or size material carried by the moisture will deposit excessively. The surface temperature will exceed that of the interior, and excessive oxidation occurs.

High-frequency drying produces almost the exact reverse of this condition. Moisture is driven out by increasing the vapor pressure inside the material and may reach the surface more rapidly than normal evaporation can remove it. For this reason, forced circulation of hot air through the dryer is usually employed to speed up surface evaporation. A completely dried rayon cake will feel moist on the surface and may even have drops of moisture clinging to the stock which covers the cake.

There is no casehardening of the surface; and, since surface temperature is lower than the interior, less oxidation occurs. The chief danger in high-frequency drying lies in forcing



the moisture out so rapidly that some of it comes out in the liquid phase and boils on the surface. This will cause migration, particularly in dense, hard-wound packages; and the drying rate should be held low enough to avoid this effect.

ECONOMICS. The possible economic advantages of h.f. drying depend to some extent upon the physical size, location, and layout of the plant.

The first is the saving in floor space. Typical 15-kw. equipment occupying 75 sq.ft. of floor space will dry 1,140 1-lb. cakes containing 100% moisture per day or 4,560 cakes in the normal oven-drying period. Larger, 125-kw. equipment with a capacity of 9,500 cakes per day occupies only about 430 sq.ft. of floor space.

Where expansion of drying capacity necessitates additional plant construction, h.f. drying may actually involve less capital investment than drying ovens.

Another possible economic advantage applies particularly to throwsters, dyers, weavers, etc. Because of the radically shortened drying cycle, the inventory of material on hand can be greatly reduced. When a new consignment comes into the plant, processing can be started the day it is received instead of waiting four days for the first batch to come from the drying ovens.

Since, as will be explained in detail later, h.f. drying permits accurate control of the end point, it is not necessary to dry the yarn to a low residual moisture and then condition it to bring it back to a desired uniform equilibrium point. This eliminates the conditioning operation with resultant savings in floor space, labor for handling, and material in inventory.

COST. The economic and quality advantages of h.f. drying must be bal-

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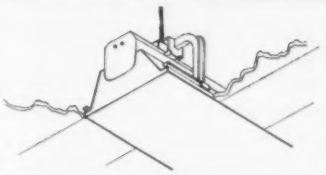

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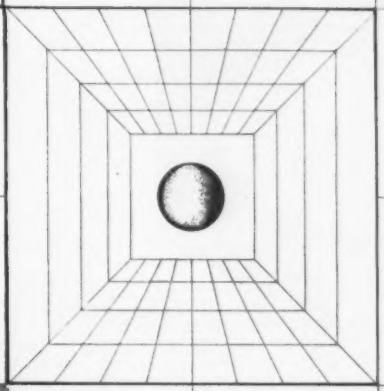

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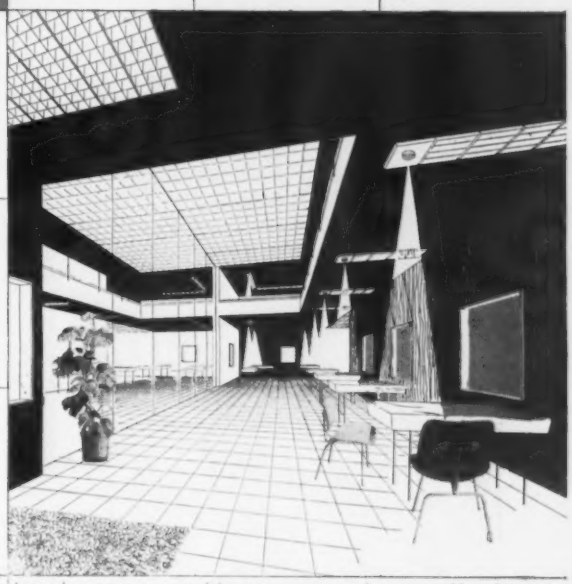

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anced against the cost of a more expensive source of heat. It requires roughly 0.33 kw-hr. of h.f. energy to dry a pound of water out of a pound of rayon. Since line power to B.t.u. conversion efficiency of 50% is obtained, drying cost, at $0.01 per kw-hr. for line power will be about $0.006 per pound of water evaporated.

Steam drying at $0.30 per 1000 lb. of steam costs about $0.0009 per pound. High-frequency drying, therefore, costs $0.005 per pound more than steam drying or 6⅔ times as much.

Labor cost will be approximately the same as for oven drying. High-frequency drying requires an attendant to place the wet cakes on the belt and remove the dry cakes. Both these operations can usually be performed by the same individual.

Of course, it would be possible to so streamline the entire operation by bringing the cakes to the dryer and removing them on conveyor belts, that attendance could be practically eliminated. This does not fit the usual procedure of existing mills, however, where material is carried from one operation to another on hand trucks.

The h.f. equipment itself requires practically no attention, other than the maintenance normally accorded to any electrical equipment. The operation is started and stopped simply by pushing buttons.

The economic advantages of h.f. drying are rather intangible and not so easy to evaluate as the increased power cost. It can only be said that the mills which have placed orders for production-scale equipment have done so after about 2 yr. of careful study of their pilot-plant operations, during which time they have become convinced that financial savings will compensate for the increased power cost and that h.f. drying will be no more expensive than conventional oven drying.

CONVEYOR SYSTEM. The mechanical equipment employed is relatively simple. Essentially it consists of a flat fabric or metal belt moving between two horizontal-plane electrodes. The ground electrode is a perforated metal plate of copper, copper-plated steel, or aluminum forming the floor of the drying cabinet. The belt rests directly upon this plate and is supported by it.

The perforations permit air to be drawn through the plate from a duct beneath. Since the electrodes are not heated, except indirectly by heat conduction from the hot rayon, steam would normally condense upon them. The air circulated through the perforations prevents this condensation.

The top electrode, which is at a high potential above ground, is a copper or aluminum screen or grid, hung on electrically insulating supports, about an inch above the tops of the rayon cakes as they rest upon the belt. A perforated or grid construction is employed, so that air may be circulated through it to prevent condensation. Incidentally, it is light and inexpensive.

This electrode assembly is enclosed in a thermally insulated metal cabinet which serves the double purpose of conserving heat and steam and of electrically shielding the electrodes to prevent high-frequency radiation and to protect personnel. The cabinet is provided with access doors electrically interlocked with the generator so that power cannot be applied unless all doors are closed.

In a typical 15-kw. pilot-plant installation, the over-all dimensions of the cabinet are 3 ft. 3 in. wide by 19 ft. 9 in. long and 5 ft. in height. The belt, which carries a single row of cakes, is 10 in. wide; and the electrodes are 9 ft. long and 1 ft. wide. Normal belt speed is about 3⅓ in. per minute. Drying cycles of 30 to 60 min. are normally used. Shorter drying periods are not recommended, as they are apt to cause arcing on the inside of the cake.

To increase the capacity of such an installation, the belt and electrodes may be proportionately increased in length, width, or both. There are no practical limits imposed upon the dimensions by electrical considerations.

ELECTRODE TUNING. The unique feature of the continuous rayon-cake dryer is the tuning of the electrode system, necessitated by the changing electrical characteristics of the cakes as they dry.

Any material in a high-frequency field may be considered as effectively a resistance in parallel with a capacity. A wet rayon cake has a very low impedance. It has a high capacity and a low parallel resistance. As it dries, capacity decreases and resistance increases until the dry cake presents a relatively high impedance to the generator.

If voltage remained constant along the electrode, the initial drying rate would be extremely high and would taper off to practically nothing. A voltage high enough to heat the dry cake would cause such a high voltage gradient in the air gap between the electrode and the wet cake that the air would break down and an arc to the cake would result which would burn it. Conversely, a voltage low enough to dry the wet cake safely would cease to heat effectively before

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a sufficiently low residual moisture had been reached.

The ideal condition would be a constant power input which requires a low initial voltage, rising along the electrode in proportion to the increasing impedance of the cake as it dries.

Practically this condition is approximated by making the first two-thirds of the electrode an inductive stub by shorting the high-potential electrode to ground near the entry end and feeding at the opposite end. This results in a natural voltage build up from the short to the feed point. The remaining one-third of the electrode is electrically separated from the first section by a series inductance to boost the voltage to a high constant value.

It has been determined by trial that the h.f. voltage at the entry end should be 1,500 to 1,800 volts, building up to about 8,000 volts for a 1-lb. cake at the exit.

The drawing on page 115 shows a unit with voltage going up to approximately 9,000 volts.

High-frequency drying has two inherent advantages over oven drying. Regardless of the initial moisture content of the cakes, the residual moisture content will be practically uniform. Secondly, drying can be stopped at almost any desired point near the end of the cycle without affecting this uniformity. It is not necessary, therefore, to dry the cakes to an extremely low residual moisture and allow them to regain to the equilibrium point, to assure uniformity. Drying can be stopped at approximately the equilibrium point with a resultant saving in power cost and time and an improvement in quality.

This effect is due to the change occurring in the electrical characteristics of the cake as it dries, previously mentioned in describing the electrode tuning. The effective parallel resistance and capacity of the cake determine the power factor, which is the ratio or percentage of power which develops as useful heat to the total kilovolt-amperes in the circuit. This is also expressed (for low power factors) as the ratio of the reactance of the material to the parallel resistance.

A 1-lb. cake with a moisture content of 170% has been found to have a power factor of 30% and a capacity of 85 micromicrofarads (mmf.).

As the cake dries, the power factor decreases linearly with almost constant slope to about 2% in the neighborhood of 25% residual moisture. The temperature, after an initial rise period, remains constant at 212° F. to about this same point. Below this point, the drying rate and power-factor curves flatten out rapidly until equilibrium moisture content at about 10% is reached, where power factor levels off at 0.4%. The capacity of the dry cake is 18.3 mmf. and its dielectric constant 3.86. Between 30% residual and 10%, the temperature rises to 240° F. and will rapidly go higher if drying is carried below equilibrium.

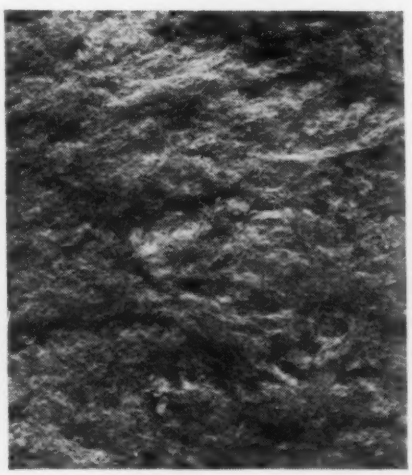
Since the voltage on the last one-third of the electrode at the exit end is constant, power input will decrease rapidly as power factor drops to a low value and drying will practically stop at some point dependent upon the voltage.

As the drying rate of the dry cakes slows almost to a standstill, that of any cakes still containing moisture will continue high until they reach the same low moisture content.

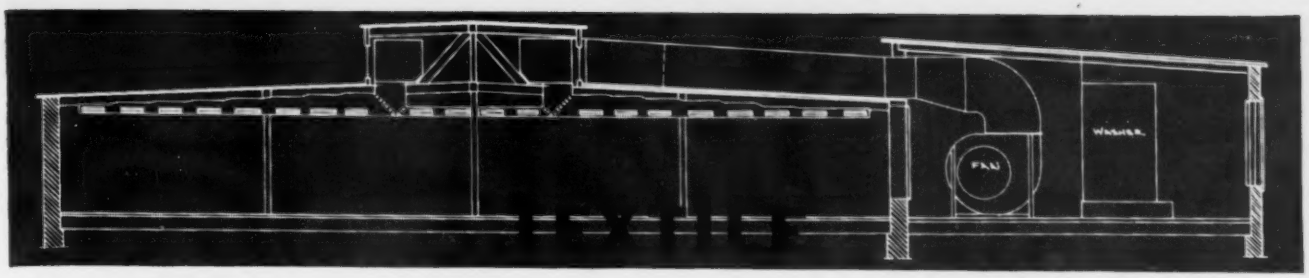
This end point may be predetermined at almost any desired residual in the neighborhood of equilibrium by the voltage on the electrode at the exit.

High-frequency rayon-cake drying, after going through a relatively long period of rigorous pilot-plant testing, appears to be on the brink of wide commercial acceptance.

You Are Looking at a Sample Of Russian Cotton With Field-Grown Color



THIS IS A SAMPLE of naturally colored cotton as grown by the Russians in Central Asia. The reproduction comes as close as possible to the original; but, in case the colored ink does not quite do it justice, it may be said that the original color closely approximates that of camel hair. It is understood that this natural, in-grown color is not fast to ordinary usage. Russian textile chemists have found, however, that a chemical treatment will fix it to a reasonable degree of fastness. One other natural color is available in this specially bred cotton —a pleasant, medium shade of sage green. This is understood to suffer



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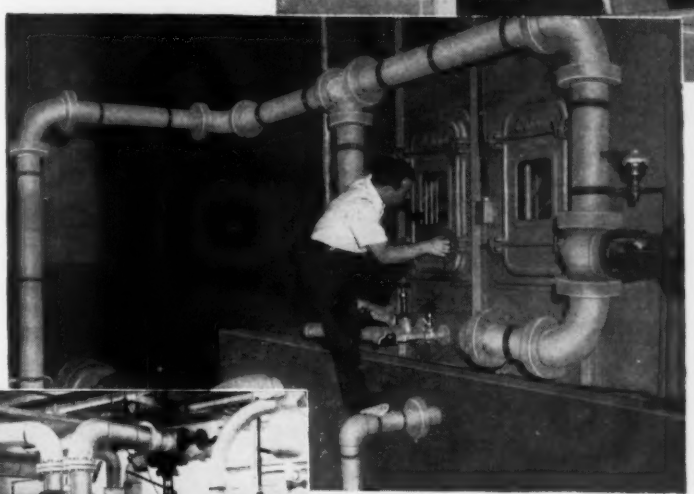

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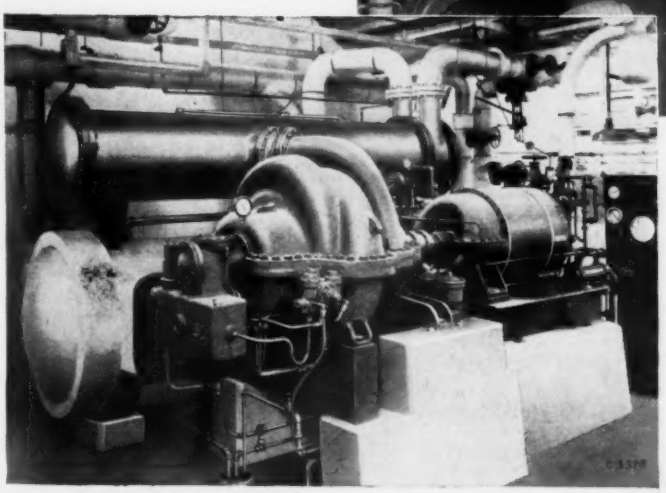

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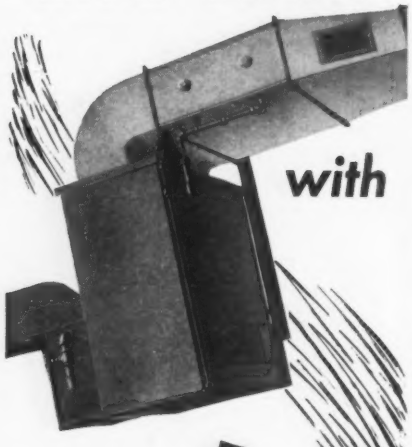

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from the same lack of fastness and to be subject to a similar degree of stabilization by chemical treatment.

It is interesting to note that these two colors in a blend approach olive-drab for military use, or, handled to appear in small irregular patterns, could approximate the camouflage fabrics which the U. S. Army developed for jungle warfare. Of course, plain white cotton, which is also grown in Central Asia, is the best camouflage for arctic fighting. So it appears that the Russian-grown cotton now supplies all that is needed in military uniforms, so far as color is concerned, without the use of a single dyestuff.

Is this all merely coincidence? Do you suppose radiation from atomic fission was used to change the cotton-breeding genes to produce naturally colored cotton like this?

TRI Research

(*Continued from page 135*)

ments are as reliable as ovens for any single material."

Chas. W. Bowden, of Brown Instrument Co., stressed the contribution of modern control instruments in efficient textile processing. He covered briefly such processes as slashing, batch dyeing, and continuous bleaching as typical. [See article by Murphy and Pollock, T. W., April, 1947, p. 119.] "We find," he said, "that for a small original investment, product quality and uniformity are improved, waste is reduced, and production cost is lowered; no other process equipment can do more." He was enthusiastic over the future of instrumentation in the textile field, saying that all of the data published on the subject to date "are a mere scratch on the surface of potential and profitable uses."

Morton Scheraga's paper on the oscillograph as a means toward more perfect machine adjustment and Lewis Sanders' report on TRI's slashing research are to be found elsewhere in this issue.

AATCC Papers

(*Continued from page 139*)

quate when using 0.2% synthetic detergent (Nacconol NR).

When scouring fabrics with lard oil, five immersions of the fabric samples are adequate. The synthetic detergent by itself was more effective for the removal of mineral-oil lubricants than its combination with 0.3% soda ash. As the synthetic-detergent concentration is increased from 0.2 to 0.6%, a gradual improvement in scouring ability is obtained.

As the concentration of soda ash is increased from 0.02 to 0.10%, the quality of scouring with a 0.2% solution of the synthetic detergent decreases. This suggested the possibility that the removal of a mineral-oil lubricant with the synthetic detergent might be more effective under lower pH conditions than those exhibited by soda ash. Excellent mineral oil removal was obtained with the use of sodium bicarbonate which exhibited a pH of 8.1.

As the pH of the scouring solution is increased gradually from 7.0 to 8.0, the scouring ability is increased markedly. From pH 8.0 to 10.0 the scouring efficiency decreases. However, the type of alkali used to obtain a given pH value exerts a marked effect on the scouring efficiency. Scouring efficiency is obtained from a borate-hydrochloric acid buffer. Greater scouring efficiency is obtained with sodium bicarbonate than with sodium tetraphosphate. These data serve to indicate that a "salt effect" is being obtained which appears to have as important a bearing on the scouring efficiency as the pH effect.

The presence of sodium chloride exerts a definitely beneficial effect on the wool piece-goods scouring ability of this synthetic detergent. Under present scouring conditions where 0.2% synthetic detergent is used, the optimum sodium-chloride concentration is in the neighborhood of 0.25%. If the sodium-chloride concentration is increased to 0.5%, a less efficient scouring performance is obtained. As the concentration of the synthetic detergent is increased, the concentration of sodium chloride should also be increased to provide the best scouring results. In full-scale practice, 0.5% sodium chloride appears to be nearly optimum. A double scour is necessary because of the goods-liquor ratio and the amount of oil that must be removed.

The scouring efficiency of 0.4% synthetic detergent may be improved to a satisfactory level by the use of sodium chloride and sodium bicarbonate. A smaller improvement is obtained with borax and modified soda (sodium sesqui-carbonate), while the improvement obtained with sodium sulphate and trisodium phosphate is not large enough to be of interest.

Effective removal of emulsified mineral-oil lubricants may be obtained with the synthetic detergent by itself if an adequate concentration is maintained in the scouring boxes. The synthetic-detergent concentration may be markedly reduced in the presence of suitable builders, such as sodium chloride or sodium bicarbonate. In continuous-scouring machines, the removal of animal and vegetable oil lubricants may be accomplished most effectively and economically with a combination of synthetic detergent and soda ash or other alkali.

Studies on Nylon Dyeing

LOUIS I. FIDELL, GEORGE L. ROYER, HENRY E. MILLSON
Calco Chemical Div.
American Cyanamid Co.

In nylon-dyeing studies in which nylon parachute cloth was employed, it was found that the effect of acids in the application of acetate dyes to nylon is slight and that the penetration of the dye into the individual fibers is in general quite rapid and uniform. These dyes give good

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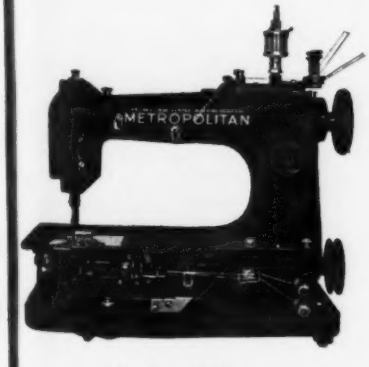

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levelness and color value, regardless of the method of application. Acetate dyes, however, while possessing excellent dyeing properties, do not exhibit good fastness to wet processing.

The acid dyes show considerable diversity in their dyeing properties over the range of pH studied. The dyeing rate of a number of these dyes is greatly accelerated by lowering the pH and raising the temperature. Some show a low exhaustion-equilibrium value regardless of pH, while others exhibit a marked increase in exhaustion with lowering of pH. Acid dyes are used in practice because they generally have good wet-fastness properties, and selected members of the group also have excellent fastness to light. However, acid dyes applied to nylon tend to accentuate not only differences which exist in the original fibers but also variations introduced by treatments prior to dyeing. Examples of these effects are found in warp streaks, barré marks, selvage effects, etc.

Metallized dyes may be satisfactorily applied to nylon at a high temperature and with sufficiently low pH. Formic acid appears to give the best color value with these dyes. In general, sulphuric acid appears to retard exhaustion, some dyes being affected to a large extent. Higher percentages of formic acid and longer periods of dyeing are indicated for these dyes.

Direct dyes are affected in their dyeing rates by changes in pH in the same manner as the acid dyes. With some of these dyes, the diffusion of the dye into the fibers is comparatively slow and does not reach completion in a normal period of dyeing. Some members of the group are superior to acid dyes in fastness to perspiration or light.

Chrome dyes when applied in the same manner as acid dyes exhibit similar dyeing characteristics. Although the chromation of dyes on nylon has been reported to present difficulties, experiments have shown that lowering the pH of the chrome bath markedly increases the rate and extent of chromation. Other experiments indicate that the addition of more chrome often has little or no effect. Chrome dyes offer the advantages of high tinctorial value and good wet-fastness properties.

General remarks indicate that nylon should not be dyed in mineral-acid solutions of low pH because of consequent loss in tensile strength. Tensile data on dyed and undyed skeins, fabric, and single fibers indicate that the acid-dyeing methods used in the time-temperature studies. the lowest pH being 2, are not severe enough to affect the tensile properties of nylon. In order to show whether dye concentrations normally used in practice would affect the tensile strength under acid dyeing conditions, dyeings were made with and without 2% Calcodur Pink 2 BL on 5-gram skeins of nylon in a 50:1 bath at 190° F. for 1 hr. The results indicate that in the application of dye over a practical range of pH the tensile strength of nylon is not greatly decreased. Is is concluded that nylon can be dyed with acetic, formic, and sulphuric acids without any marked effect on its tensile properties if the pH is above 1.6 and the dye concentration not too high.

The influence of physical differences in nylon on its dyeing behavior depends to some extent upon the dye used. The acetate dyes are least affected, while with other dyes variations in shade are obtained, resulting in barré effects, warp streaks, etc. Nylon which is not uniformly shrunk during setting or in preparation for dyeing will not dye uniformly. If during the setting or dyeing period variations in tension occur, these variations will be apparent in the shade of the dyed material.

Current Developments in Hosiery Dyeing and Finishing

E. J. SIEGRIST
Holeproof Hosiery Co.

The increasing demand for dark, sheer hosiery and finer nylon yarns, some of them in single-filament form together with multifilament yarns in welts or reinforcings, present problems in obtaining a good dye job, particularly with respect to union between the monofilament and multifilament portions.

For example, a stocking made of 15-den. monofilament yarn in the leg and 40-den., 13-filament in the welt and reinforcings, dyed with acetate dyes in light or medium shades, requires control of temperature during both preboarding and dyeing. Best results in preboarding are not necessarily related to best results in dyeing. It has been claimed that low preboarding temperatures produce better unions than high.

Actually, temperatures such as 215° or 230° F. are satisfactory if the time cycle is sufficient for a good set; and as temperature is increased in preboarding, the shade in dyeing changes, but the union between the two portions of the stocking is very slightly affected. The difference in the final dyed shades obtained between stockings preboarded at 215° and 270° is considerable. Control of temperature in preboarding should be used to obtain the desired set, shrinkage, shaping, and final appearance rather than to aid in obtaining unions. For this reason, a moderately high temperature, in the range of 250° to 260° F. is recommended.

The effect of temperature control in dyeing is different. If acetate dyestuffs are used, temperature and prolonged time result in heavier monofilament and lighter multifilament portions of the stocking. It has been shown that a temperature of approximately 150° F. results in the best unions; but no definite rule can be adhered to because of the selective affinity of nylon fibers for various dyes. A temperature of 150° F. is best for one combination of dyes. At 160° F., there is a marked increase in depth of color and shade on the monofilament yarn; while at 200° F., the difference between welt and leg becomes extreme.

In a series of dyeings made using an individual dyestuff and varying percentages of Epsom salt, there was apparently no difference in the color value obtained between 2½ and 20%, so that the amount of salt added did not seem to have any bearing on the result achieved. Apparently, the presence of the salt rather than the amount, is the important factor.

These dyeings show a decided increase in

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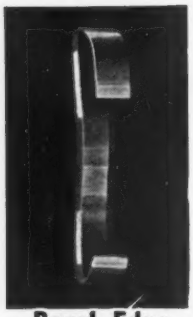

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affinity with both Epsom salt and acetic acid over the neutral dyeings; and, furthermore, in several cases the affinity with Epsom salt is greater than with acetic.

Dyestuffs for combination shades should have saturation points as nearly alike as possible, and the total practical percentage should not exceed the saturation point of the lowest dyestuff in the combination. Where combination fibers are used, as for example, nylon in the presence of cotton or rayon, the Epsom-salt method of dyeing certainly shows promise. In men's hosiery, it would be practical to use direct colors in combination with these selected acid colors for heavy shades; and by substituting Epsom salt for acetic acid, the hazards of an acid bath are eliminated. Some precautions, of course, are necessary in using a salt like Epsom; and it is strongly recommended that one of the synthetic detergents which is stable to calcium or magnesium salts be used as a dyeing assistant. It follows that soap should not be used, because soap formations may result.

For dyeing dark shades on nylon-cotton or nylon-rayon combinations, the use of magnesium sulphate with acid colors generally yields greater color value without the hazards of an acid dye bath.

When two or more acid dyestuffs are used together to produce a given shade, selection of these dyes should be based on their behavior as to saturation point, speed of exhaust, and relative neutral affinity.

Reaction Between Wool and Active Chlorine

DANIEL FRISHMAN, LYDIA HORNSTEIN, ARTHUR L. SMITH, and MILTON HARRIS
Harris Research Laboratories

That wool can be made resistant to shrinkage during laundering by treatment with active chlorine has been known for many years, and for this reason the reaction between wool and active chlorine is of great interest to the textile industry. The reaction between wool and solutions of active chlorine in these three different pH ranges may be summarized as follows:

1. Treatment of wool with solutions of active chlorine at pH 1 results in a large weight loss, destruction of the surface-scale structure, and a change in mechanical properties. Although cystine is destroyed with subsequent loss of sulphur, the cystine content of the wool treated at pH 1 is actually higher than that of other samples treated below about pH 8.

2. Treatment of wool with solutions of active chlorine at pH 3 to pH 7 results in either a slight weight loss or slight gain in weight, but the mechanical properties as well as the appearance of the fiber indicate that extensive modification has occurred. The cystine content is lowest and the alkali solubility is highest in this pH range. The sulphur loss is small compared to the cystine loss, indicating that the oxidized sulphur groups remain in the treated wool. A further indication of the extensive modification that has occurred is provided by the large changes in acid, and base-binding capacity of the samples treated in the pH range.

3. Treatment of wool with solutions of active chlorine at pH 9 to pH 11 results in a slight loss in weight and only minor modification of the wool protein. The scales appear to be unaffected, and there is only a slight change in the mechanical properties. Although there is a slight loss in cystine, it can be almost quantitatively accounted for by the loss in sulphur.

4. These data indicate that the treatment of wool with solutions of active chlorine at pH 8 to pH 9 results in only slight modification of the fibers. Additional work in the laboratory and in the plant using aqueous hypochlorite solutions at pH 8 to pH 9 under controlled conditions has further demonstrated that wool can be made shrink resistant with a minimum of fiber modification under these conditions.

USEFUL ACCESSORIES FOR TEXTILE MILLS

Protective Apron

Made of polyvinyl chloride-acetate, the new Durma-Gard plastic apron announced by West Disinfecting Co., 42-16 West St., Long Island City 1, N. Y., is said to offer maximum protection against acids, alkalies, grease, oils, and other occupational hazards.

Durma-Gard is not burdensome to wear, it is said; weighing only 10 oz., it reputedly allows complete freedom of movement without hampering efficiency. An added safety feature is the specially constructed trough designed to catch drippings which would otherwise fall on shoes and clothing. The apron is said to be washable with soap and water.

Lift-Truck Attachment

A new slewing-boom attachment for automatic fork trucks has been announced by Automatic Transportation Co., Chicago, Ill. The quickly detachable boom has a capacity up to 1,820 lb., a maximum height of 18 ft. 5 in., an outreach of 54 to 108 in., a horizontal arc of 120°, and is designed to perform all operations usually requiring a crane.

Heavy-Duty, Pneumatic-Tired Fork Truck

"Yardlift 40" is the name of a newly developed pneumatic-tired fork lift truck developed by Clark Tructractor, Battle Creek, Mich. Designed for work on surfaces too uneven for solid-tired trucks, the truck has a capacity of 4,000 lb. at 24 in., a lift of 120 in., with an 85½-in. overall height. A new-type drive axle permits a 42-in. overall width, and a high degree of maneuverability. Speeds of 9.4 mph. in high and 2.9 mph. in low in both forward and reverse directions are possible, and simplicity of tire change is featured.

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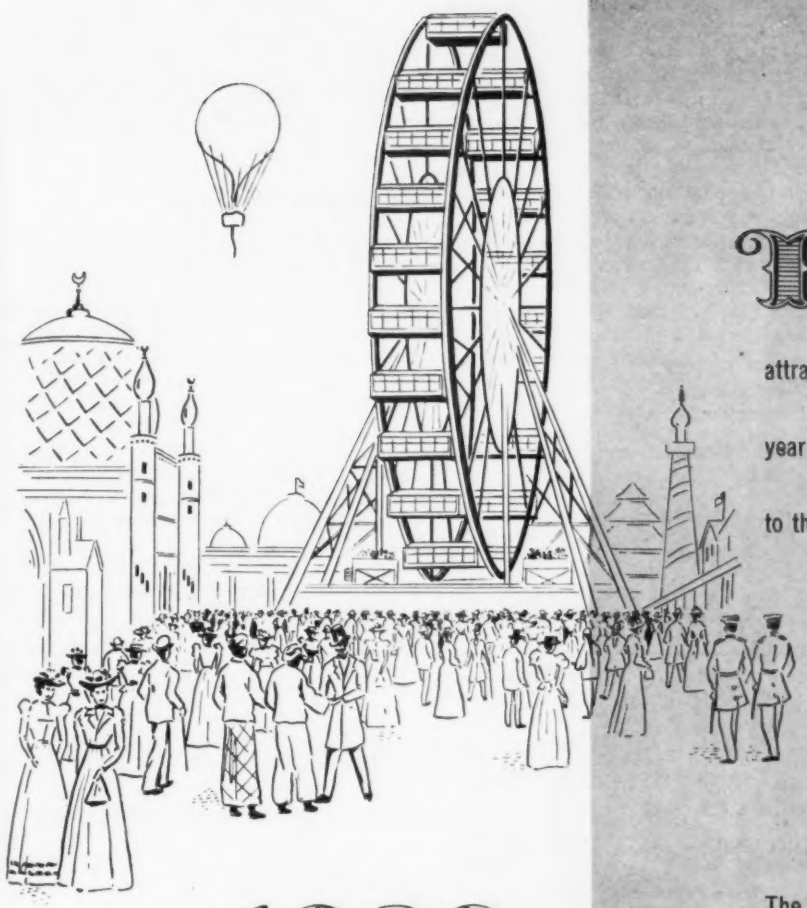

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through a new line of voltage-regulation units, called Nobatrons, announced by Sorenson & Co., Inc., 375 Fairfield Ave., Stamford, Conn.

Nobatrons, available in six standard models, operate on a 95- to 125-v. a.c. source of 50 to 60 cycles and provide amperages of 5, 10, or 15 with output voltages of 6, 12, or 28, respectively. Regulation accuracy of 0.5%, maximum ripple voltage of 1%, and recovery time of ½ sec. reportedly make Nobatrons ideally suited for critical applications where constant, unvarying d.c. voltages are required.

Nobatrons are expected to be useful in d.c. ammeter calibration, in furnishing power to light sources, in battery-operated relays, in supplying current to filaments of d.c. amplifiers and in other places where it is desirable to replace a battery.

Paint Remover

Bull Dog Remover, containing a newly formulated, quick-acting solvent for removing tough coats of old paint, varnish, enamel, shellac, and lacquer, has been announced by Gillespie Varnish Co., Dey St., Jersey City 6, N. J. Supplied in liquid and cream form, the remover reportedly can be used equally well on upright or flat surfaces. It will stay moist and deep-cutting as long as 24 hr. in the hottest sun, reducing hard-finish coats to a sludge that can be stripped off readily without leaving a greasy film, it is stated.

Bull Dog Remover is said to have no disagreeable odor, to be free from acid or alkaline reactions, and to be non-corrosive. It reputedly will not raise wood grain, damage the fiber, or injure the user or brush used to apply it.

Bleaching Solution Tanks

Transparent storage tanks made of Lucite acrylic resin, developed for use in storing chlorine bleaching solution, have been announced by Sto-Cant Engineering Co., Maywood, Calif. The plastic tanks are expected to last indefinitely since the Lucite resists the chemicals in the solution and repair of the plastic material is relatively simple and inexpensive, it is reported.

Measuring 36 in. in diameter and 5 ft. in length, the tanks are constructed of ¾-in. sheet Lucite. Reinforcements consist of strips of Lucite along the circumferential and longitudinal seams.

No liquid-level indicators are necessary since the transparent plastic allows constant observation of the contents.

Mill Maintenance TO KEEP 'EM RUNNING

Ventilating Equipment Needs Regular Inspections

Ventilating equipment, particularly in installations where a breakdown may cause possible damage to the health of workers, should be inspected regularly to insure uninterrupted service. There are five common causes of failure of ventilating equipment, according to a report by the Safety Research Institute. Regular and efficient inspecting and preventive maintenance can avoid breakdowns from these causes.

The five causes that should be checked for are:

1. Fan running backward. This faulty condition has been found to be the most frequent cause of ventilating-equipment failure. The equipment is almost invariably put in correctly; but sometimes a fan needs repairing, and often when it is started up again the direction of running is reversed. The direction of the fan motion should be checked regularly, and a special check should be made after each repair job on the fan.

2. Fan belt loose. If the fan belt stretches and drives the fan too slowly, the proper amount of air is not exhausted. A well-engineered ventilating system can fail to operate efficiently or satisfactorily from this cause. If new belts are installed, they should be adjusted after a short period of running. Thereafter, the tightness of the belts should be checked periodically.

3. Overloaded system. A ventilating system is usually engineered for a definite set of conditions. Often additional outlets are made, without additional capacity being added to the exhaust system. The result is that the cubic feet of air to be moved is greater than the capacity of the system, and inefficient operation of the system follows. To guard against such a condition, the velocity of the air stream should be measured. If the system has been overloaded with additional ducts, corrective steps should be taken.

4. Ducts and blades dirty. Operating efficiency is affected by dirt and lint accumulations. Regular cleaning is necessary to remove them.

5. Insufficient intake air. It is as important to provide sufficient intake air as it is to provide sufficient fan capacity and exhaust area. If the capacity of a system is increased, care should be taken to provide the additional intake air needed.

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WARP SIZING
Influenced by 54 Variables

HIGHLIGHTS: *Size formula suitable in one mill frequently not so in another—Possible differences in sizing fall into eight major groups—Important step is to list all possible variables.*

IT IS COMMONPLACE to hear the statement that a size mixture which has given a satisfactory performance in one textile mill did not work at all in another identical mill.

The trouble with the statement is that the mills are not identical; if they were, the size would give the same results in each.

There are 8 major groups of variables involved in slashing and they comprise from 2 up to 17 variables per group, or a total of 54 variables. It is obvious that it would be almost impossible to find two mills in which all 54 variables are identical.

At present, knowledge of the relative importance of a certain number of the variables is very limited. It is rare to find as many as 10 of the variables listed in reports on a slashing operation, so it is generally impossible even to guess why the size mixture which works well in one mill gives a very unsatisfactory performance in another. Intelligent study and comparison of results in different mills is out of the question under these conditions.

An important step for more effective progress in the art of slashing is to list all of these variables and to record as many as possible in all slashing operations. Such a list should contain the following:

A. **Water**
1. Bacteria
2. pH
3. Salts in solution

B. **Size**
Classifications:
1. Starches
2. Gelatins and glues
3. Gums
4. Synthetics

Variations:
5. Starches—maturity
6. Milling methods
7. Climate

Gelatins:
8. Raw material
9. Degree and temperature of extraction

Preparation:
10. Soaking or swelling
11. Ratio of size to water
12. Time of heating, temperature and time of cooking

Storage:
13. Temperature at which held
14. Agitation during storage
15. Preservatives added

Modifiers:
16. For starch, also enzymes

Softeners:
17. Raw tallow, sulphonated oils and tallows, synthetics

C. **Size Box**
1. Temperature
2. Constant level
3. Immersion or roll impregnation (single or double immersion)
4. Pressure on quetsch rolls, cover on quetsch rolls
5. Speed of travel through size
6. Tension on yarns

D. **Yarn**
1. Type of fiber or mixture
2. Previous treatment of fiber, scouring, etc.
3. Oiling of fibers, dyeing
4. Twist in yarn

E. **Slasher**
Group (*a*)
1. Tension on creel beams
2. Speed in yards per minute
3. Temperature and circulation of air in air dryer
4. Temperature of cans
5. Cans covered or bare
6. Tension on yarns in slasher
7. Stretch in slashing
8. Regain to which dried
9. Static electricity—discharge of

Group (*b*)
10. Cotton or silk system
11. System of drive (hydromatic drive)
12. Air dryer or can dryer
13. Number of cans
14. Lease rods and comb

F. Automatic Controls
1. Size-box temperature

(Continued on page 226)

SIZE ELEMENTS

All mills and finishers have an interest in the following elements of sizing: (*A*) cost of size mixture per unit of finished cloth; (*B*) weave-room efficiency, including (1) loom stoppages due to broken ends, (2) balling up, and (3) shedding; (*C*) quality of cloth, including (1) warp defects, (2) uniformity, and (3) hand; (*D*) ease cost, and completeness of size removal; (*E*) good dyeing qualities in cloth.

Material presented here is a portion of a paper by Lewis Sanders, president of the Textile Research Institute, at the annual meeting of the institute.

Four thousand of us say "*Thank You*"

The four thousand members of the Hyatt organization thank you. We acknowledge our sincere obligation to the many thousands of Hyatt Roller Bearing users.

Working together, from design board to finished product, you have helped Hyatt to become the world's largest manufacturer of cylindrical roller bearings and one of the leaders in the production of angular contact bearings.

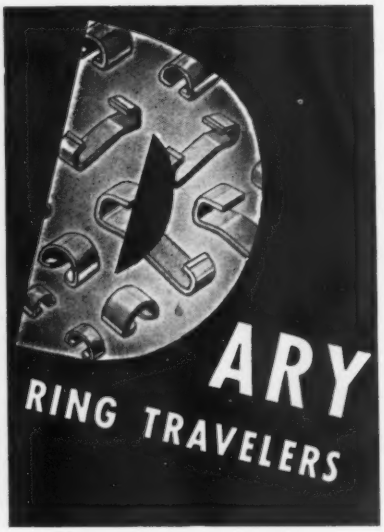
Hyatt, in turn, has helped leaders in industry in almost every field where antifriction bearings are a vital factor in efficient production performance.

Here at Hyatt we resolve to continue striving to develop still better bearings for every application.

Much new equipment has been installed in our plants at Harrison and Clark Township, New Jersey. New skills, new minds, new methods are being constantly applied to the solution of antifriction problems. There is nothing static at Hyatt—our aim is always forward for this new year and others to come.

So again, all our thanks for your generous cooperation. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.; Chicago; Detroit; Pittsburgh; Oakland, California.

HYATT ROLLER BEARINGS



"Ring" In the New Year Right!

Precision made for dependable performance, Dary Ring Travelers continue to make better revolutions around the spinning ring in 1948.

Mill men familiar with Dary know that these reliable travelers are right for every spinning and twisting job. Processed for extra wearability and consistent uniformity, they make higher spindle speeds possible with every count and type yarn.

One of the Dary representatives listed below can start you off with better New Year's Revolutions by telling you the whole story of Dary Dependability. Call him in, today! "Ring" in the New Year Right!

PROCESSED
SYMBOL OF
SUPERIORITY

The DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS

JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEILL, BOX 720, ATLANTA, GA.
H. REID LOCKMAN, BOX 815, SPARTANBURG, S. C.

2. Size-box level
3. Can temperature
4. Air temperature in air dryer
5. Stretch
6. Regain to which dried

G. **Atmospheric Conditions**
1. Temperature
2. R.H. of both slasher and weave rooms

H. **Time Elements**
1. Time elapsing between slashing and weaving
2. Condition of storage

With so many variables in the problem, it will be only by a happy accident that one can improve present sizing performance through formulating new size mixtures and trying them in the mill.

PACKING FAULTS Result in Goods Damaged in Transit

HIGHLIGHTS: *Overloaded, poorly sealed cartons result in frequent damage to textiles during shipment—Steel strapping permits heavier contents—Plywood cases should be marked as to top.*

By WARREN R. WHITE
Container Engineer, Union Pacific Railroad Co.

AMONG COMMON FAULTS noted in shipments of textiles are overloaded cartons, cartons open at the flaps due to failure of sealing tape, and second-hand cartons with two or more sets of markings.

Each carton carries a boxmaker's certificate indicating the maximum size and the gross weight for which it is acceptable for shipment. Some shippers ignore these limitations with the result that cartons fail in transit and the merchandise is received soiled or damaged.

Improperly applied sealing tape is a frequent cause of bad-order deliveries. Even such a seemingly simple operation has a technique. Sometimes tape is not sufficiently moistened, either through carelessness or through neglect of the dispensing machine. In other cases, application is delayed until the moisture has dried. If applied too quickly, the carton acts as a blotter and absorbs the moisture before the glue is dissolved. Whatever the cause, the tape peels off in transit and the contents are damaged.

STRAPPING IMPROVES CARTONS. Provision is made in the Consolidated Freight Classification for the use of cartons exceeding the size and weight limitations mentioned above, when cartons are bound with steel strap. When larger unit packages are required, such reinforcement is recommended. Moreover, banding relieves the strain on the sealing tape and elminates failures from that source.

Cleated-plywood shipping cases are a favorite with the textile industry. They are also regarded favorably by carriers because of claim experience. Not only do they permit greater weight of contents than cartons, but they also offer added protection from contact with other merchandise that might result in puncture and damage. Shippers using plywood cases are advised to mark "This Side Up" on the tops of such cases. When stowed in that manner they offer greatest resistance to the weight of other merchandise loaded on top of them. Consignee's address should be placed on the top surface also. This makes it unnecessary for freight handlers to turn the case to locate the side on which marking would otherwise appear.

Freight authorities examine a well-designed case containing textiles—O. J. Wullstein, Union Pacific general freight claim agent, is at left and Warren R. White, Union Pacific container engineer, at right.

REDUCES
LOOM STOPS, WARP TYING AND HANDLING 2/3

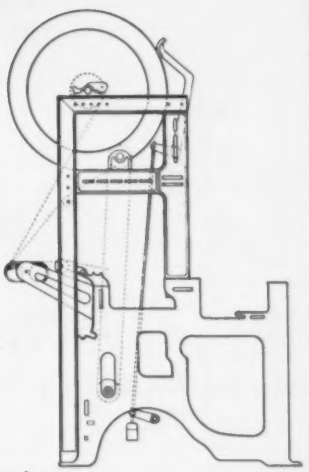
Switch to Bigger Beams for Bigger Profits

Step up slasher and weave room efficiency—cut costly beam handling and expensive machine stops by installing larger beams. You will pay for the change-over with increased production.

If you're now using 20" beams, loom stops for tie-ins will be reduced by over 2/3 when you switch to 36" beams. A change-over from 24" beams to 36" beams cuts stops in half.

We'll be glad to show you how larger beam heads will improve your production schedule. Our expertly machined, high grade heads are mounted on well-seasoned barrels . . . sealed against moisture . . . built for long life.

BIGGER BEAMS ADAPTED TO FIT ANY WEAVE SHED



In weave sheds with narrow alleys bigger beams can be easily installed on top of the looms at little additional expense.

WEST POINT FOUNDRY & MACHINE CO.

(Batson-Cook Company, Owners)

WEST POINT, GEORGIA

WHAT'S NEW?

in Welding Fittings

GET THIS BOOKLET—The Tube-Turn line of welding fittings is BIG, and still growing! This 20-page Supplement to TT Catalog No. 111 gives you data about important new items which, more than ever, make Tube Turns your *one source of supply for all welding fitting requirements.*

TUBE-TURN

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Books of Interest

Gives Over-All View of Leaf and Stem Fibers

LONG VEGETABLE FIBERS, by Ludwig Weindling; Columbia University Press, New York; 312 pages, $5.00.

Although the United States is not a grower of any of the long vegetable fibers on any scale worthy of mention, it has now produced a comprehensive book devoted to these fibers. The author of this book, Ludwig Weindling, has served as engineering consultant to manufacturers of these fibers in the United States and Canada; and the material assembled in the book is described as the accumulation of many years experience in the field.

The book is an over-all study of the complete long-vegetable-fiber business. Lest some be hazy on the fibers included in this group, the book covers manila hemp (which is not hemp at all, but abaca), sisal, istle, jute, flax, hemp, and concludes with nine pages on ramie. The approach is commercial rather than technological. However, the data presented include facts on the growing of the fibers in countries of origin, including harvesting and decorticating methods, grades and qualities, marketing procedure, acreage and volume, and destination of output. It takes up manufacturing methods required for conversion of fibers into various products, with data on the manufacturing industries of the chief producing centers.

The author sees his book as useful to four classes of readers: (1) those interested in economic planning who desire a birdseye view of this branch of the textile industry and its importance; (2) those interested in general commerce who desire a broad conception of the scope of the trade in long vegetable fibers; (3) textile students, for whom the volume might be a text book or supplementary reading; and (4) persons engaged in some phase of leaf-and-stem-fiber operations who desire knowledge of the general nature of the companion fields.

In the minds of many, the standing of the U.S. in the hard-fiber field is probably obscure, and it is interesting to learn that the U.S. and Canada normally manufacture 32% of the world's manila hemp, 52% of the sisal, 70% of the istle, less than 5% of the jute and probably even less of the flax. These last two figures are derived from statements in the book and are not given statistically. Of course, the U.S. is a large importer of jute and flax products in the form of burlap and linens. The author states that in normal years the U.S. consumes about 800,000,000 lb. of jute products, about 25% of the world's total, which makes this country the largest single market for such products. In weight, this country manufactures less than one-fifth of the jute products it uses, the balance, of course, being imported. Imports account for all but a very small portion of U. S. linen.

The author ranks the annual world production of the long vegetable fibers as follows (in millions of pounds): jute, 3,000; flax, 1,500; hemp, 1,200; manila hemp, 340; sisal, 310; New Zealand and Mauritius hemp, 44; istle, 40; sunn fiber, 30; ramie, 20 (credited practically all to China). All of this production engages 14,000,000 acres and 5,000,000 workers in various parts of the world.

Lucid Treatment of A Hot Subject

INDUSTRIAL APPLICATIONS OF INFRARED, by James Doyle Hall; McGraw-Hill Book Co., 330 W. 42nd St., New York, N. Y.; 202 pages, $3.50.

Infrared radiation from electric lamps as a means for commercial drying of materials is younger, perhaps, than many realize. The author of this book dates the start of general interest in this technique as November, 1938, when publicity was first given to the Ford Motor Co. process for drying finishes on automobile bodies in infrared tunnels.

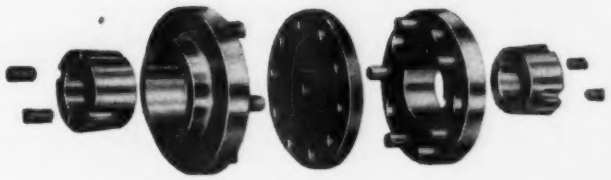
The book under review emphasizes the practical rather than the theoretical aspects of radiant heat. It covers the following major points: advantages of infrared heat, the incandescent lamp as a source of infrared radiation, radiant heat equipment, planning and designing an infrared installation, special problems, applications in specified industries, etc.

Actual space devoted to textile drying and finishing is small; but the data, analysis, and performance reports given generally or from other industries are stimulating to thought. The textile man whose work involves infrared lamps will gain much useful information from the book, and the man who approaches it as a new subject will find the presentation lucid and easily understandable.

NOW! TAPER-LOCK* FLEXIBLE COUPLING!

It's new! It's different! A packaged Flexible Coupling . . . available from stock . . . and ready to install *without reboring.* It's another Dodge development for mechanical power transmission that saves time, cuts cost!

* TRADE MARK REGISTERED U.S. PAT. OFF.



- ✓ Built with the famous TAPER-LOCK bushing (patented).
- ✓ Available from stock in a wide range of standard bores. *No reboring!*
- ✓ Fastens to shaft with the firmness of a shrunk-on fit.
- ✓ Easy on—easy off. Can be disconnected without moving coupled machines.
- ✓ Compact design occupies minimum space on shaft. Safe! No projecting parts.
- ✓ "Pin Type" design with oak tanned sole leather center disc provides flexibility, resiliency and strength.
- ✓ Made of close grained semi-steel and machined all over to insure balance and true running.

DODGE MANUFACTURING CORPORATION
MISHAWAKA, INDIANA

DODGE

of Mishawaka, Ind.

CALL THE TRANSMISSIONEER

(or write the factory) for complete bulletin on this newest Dodge contribution to better mechanical transmission of power. The Transmissioneer—your local Dodge distributor—is a factory trained specialist. Look for his name under "Power Transmission Equipment" in your classified phone book.

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NAME PLATES

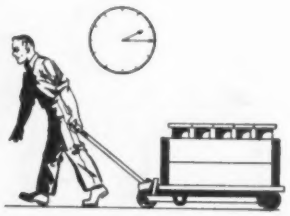
FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY,
ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS

ROUGH FLOORS?

There's no need to tie-up important floor areas or detour traffic for floor repairs . . . use Stonhard Stonfast.

Stonfast is easy to use, you simply fill the hole to be patched and tamp.

That's all there is to it. Stonfast is ready mixed and ready for traffic the instant you place it . . . without wait for drying or setting.



Return the coupon for free textile mill floor maintenance guide and information about Stonhard Stonfast.

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Building Maintenance Materials

Serving Industry Since 1922

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News of the month

Cotton Council at Atlanta. More than 600 leaders from the 17 cotton-producing states will convene in Atlanta Jan. 21 to 23 for the tenth annual meeting of the National Cotton Council. Theme of the meeting will be "Cotton—In a World of Uncertainty." Speakers will outline steps which will be taken by cotton to better its position during the coming year.

Memphis Carnival in May. Participation of the 1948 Maid of Cotton in the annual Memphis Cotton Carnival, the nation's party in the land of cotton, will reach its climax on Maid of Cotton Day, Wednesday, May 12. By that time, she will have visited more than 30 cities and two continents as the chief good-will-and-fashion ambassador for cotton.

Urges End of Reciprocal Agreements. The State Department's tariff-reduction agreements are called "tariff setting by crystal gazing" in a statement by the American Products Council, Washington, D. C., urging Congress not to extend the reciprocal trade agreements act when it is up for renewal in 1948.

Chemical Show. The 21st Exposition of Chemical Industries was held during the first week in December in New York, N. Y. Over 300 firms were exhibitors, and many products of interest to the textile industry were displayed. These products included dyestuffs, surface-active agents, printing inks, valves and other plumbing equipment, corrosion-resistant products, agitators, process-control instruments, heating and drying equipment, and laboratory equipment such as scales, spectrophotometers, pH meters, etc.

Calls for "Maturity." Warning that "forces trending toward conflict and ferment now dominate labor relationships in the United States," a labor-relations authority urges "emotional maturity" in both labor leaders and business managers, and adds "The qualities of leadership developed on both sides will determine the evolution of industrial relations in the United States." Benjamin M. Selekmen, Kirstein Professor of Labor Relations at the Harvard Business School, in his new book, "Labor Relations and Human Relations" (McGraw-Hill), observes that both sides face "a test of the most exacting kind" in the days ahead "because the very stresses that make maturity essential also make it difficult."

Union Wants Harmony. The American Federation of Hosiery Workers has presented a fund of $5,000 to the Wharton School of Finance & Commerce of the University of Pennsylvania to be used by the Industrial Research Dept. of the school for impartial work on any problems designed

Textile Calendar

Materials Handling Exposition, Cleveland, Ohio, Jan. 12 to 16, 1948.

Independent Association of Stocking Manufacturers, 6th annual banquet, Broadwood Hotel, Philadelphia, Jan. 17, 1948.

Wholesale Dry Goods Institute, annual meeting, Hotel New Yorker, New York, Jan. 20 to 22, 1948.

National Cotton Council, tenth annual meeting, Biltmore Hotel, Atlanta, Ga., Jan. 21 to 23, 1948.

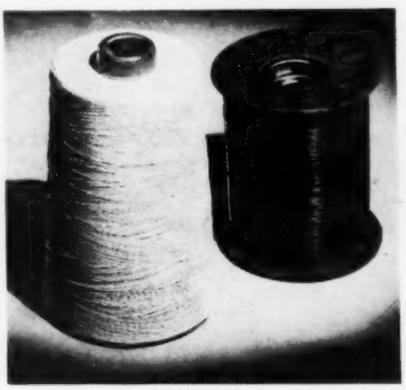
International Heating & Ventilating Exposition, Grand Central Palace, New York, Feb. 2 to 6, 1948.

Hosiery Industry Conference and Annual Meeting of NAHM, Claridge Hotel, Atlantic City, N. J., April 19 and 20, 1948.

International Exposition of Textile Machinery, Equipment & Supplies, 71st Regiment Armory, 34th St. and Park Ave., New York, May 3 to 7, 1948.

World Trade Week, sponsored by Chamber of Commerce of the U. S., May 16 to 22, 1948.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1948.



***PLEXON YARNS** are now available on cones as well as on spools. The new put-up is designed to alleviate time-consuming rewinding at mills accustomed to working with coned yarns.*

FINEST GAUGES

SILKS, COTTONS all SYNTHETICS

PERFECT MATCHING

Complete Stocking in ONE Operation

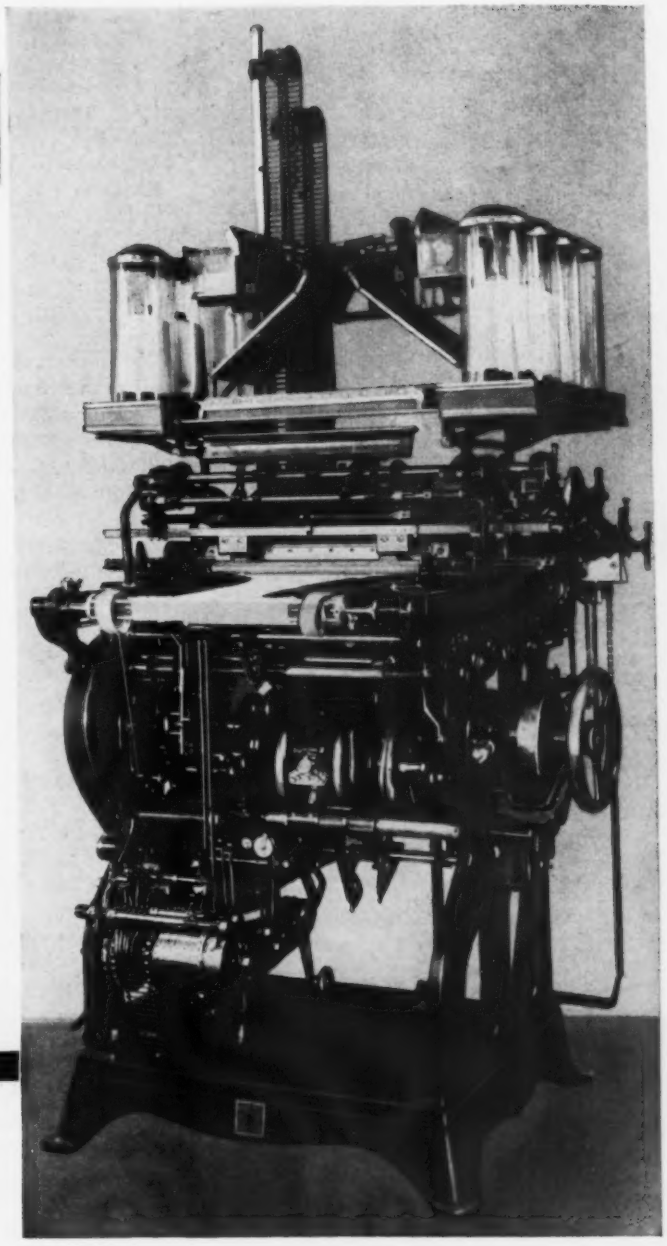
Immediate PRODUCTION

MODERN

A 1948 Parade of STAR FEATURES of the WILDMAN

Single-Head, Single-Unit, Full-Fashioned

HOSIERY MACHINE



Compare these features with what you are getting along with today. First and foremost, this Wildman machine is MODERN in a totally new meaning of the word.

Then it is shipped complete and starts producing stockings about 3 hours after it reaches your plant. Its perfect matching is the direct result of knitting the complete stocking from top to toe in one operation.

The ideal machine for fine gauge hosiery because it is not affected by changes of temperature. There are other exclusive features that we'll be glad to tell you about.

WILDMAN MFG. CO., Norristown, Pa.

THE CASE OF THE 70-COLOR BOTTLENECK

Notes from the Herrmann Casebook on Successful Management

PRODUCTION AT COMPANY C, a well-known manufacturer of woven and knitted goods, was falling behind. The company blamed the carding room for the delay. But the real bottleneck existed elsewhere.

THE ANSWER: A survey showed two major difficulties—the fact that more than 70 basic colors were used and a poor mill layout. Following our recommendations, the number of basic colors was reduced to less than 20. And a complete organization chart was drawn up.

THE RESULTS: Company C has been able to meet production schedules without any addition to its personnel.

If you have a problem involving costs, methods, research or training—write

DR. ROY HERRMANN

Management Consultant and Economist

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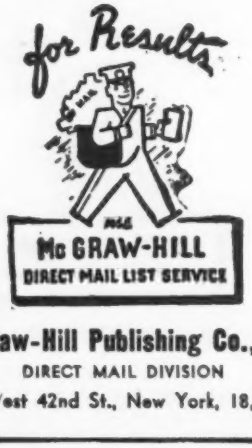
New York 28, N. Y.

Solves the Problem of Mailing List Maintenance

Probably no other organization is as well equipped as McGraw-Hill to solve the complicated problem of list maintenance during this period of unparalleled change in industrial personnel.

McGraw-Hill Mailing Lists cover most major industries. They are compiled from exclusive sources, and are based on hundreds of thousands of mail questionnaires and the reports of a nation-wide field staff. All names are guaranteed accurate within 2%.

When planning your direct mail advertising and sales promotion, consider this unique and economical service in relation to your product. Details on request.



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DIRECT MAIL DIVISION
330 West 42nd St., New York, 18, N. Y.

to better industrial relations. The formal presentation was made by Alexander McKeown, the union's national president, at a luncheon in Houston Hall on the campus. The gift was accepted for the university by Hiram S. Davis, director of the Industrial Research Dept. In presenting the gift, Mr. McKeown referred to it as a "clear indication that our union is interested solely in bringing about harmony between labor and management in America."

India Makes Machinery. Organization of India's first major textile-machinery manufacturing company has been completed and plans are going ahead rapidly for the equipment of the plant near Bombay, according to McGraw-Hill World News. Titled the National Machinery Manufacturers, Ltd., the concern's initial capital will be $4,500,000 out of a total authorized capitalization of $15,000,000. Of the shares, 74% are to be purchased by Indian textile companies, and 26% will be held by Britain's Textile Machinery Makers, Ltd. In the first stage the plant's capacity will be 20,000 spindles a month, but arrangements have been made to expand this to 40,000 monthly as soon as circumstances permit.

TEXTILE MILLS AID EUROPE'S NEEDY— *In response to the urgent need of distressed peoples of Europe for fabrics, textile mills under a voluntary program initiated by American Cotton Manufacturers Association members, have contributed enough cloth to make the equivalent of 250,000 dresses. The American Friends Service Committee is handling distribution of the material. Shown in picture are (left) Wm. A. Longshore, treasurer of AFSC, and A. Harold Carson, warehouse director, AFSC, inspecting some of the cloth at the organization's Philadelphia warehouse from which point the goods are being shipped to Europe in time for the made-up garments to be worn this winter.*

Wool Overseers Oppose Taft-Hartley. The National Association of Woolen & Worsted Overseers at the annual meeting in Boston Nov. 15 went on record as protesting the Taft-Hartley Labor Law on the ground that certain items are unfair and that the act in giving "employers an opportunity to hold in subjection without right of appeal all foremen, on the ground that they are part of management . . . makes foremen a pawn for labor as well as to management." The newly elected president, James Halliday, of Oakland, Me., in his address also spoke about the Taft-Hartley act and suggested opposition to legislators who had voted for it. The meeting voted to accept 30 new members and referred applications of 21 more to the Ways & Means Committee. It was stated that membership has grown to exceed 1,800. Raymond Bourey, Charlestown, N. H., was elected third vice president in the only contested election; the other officers advanced one grade.

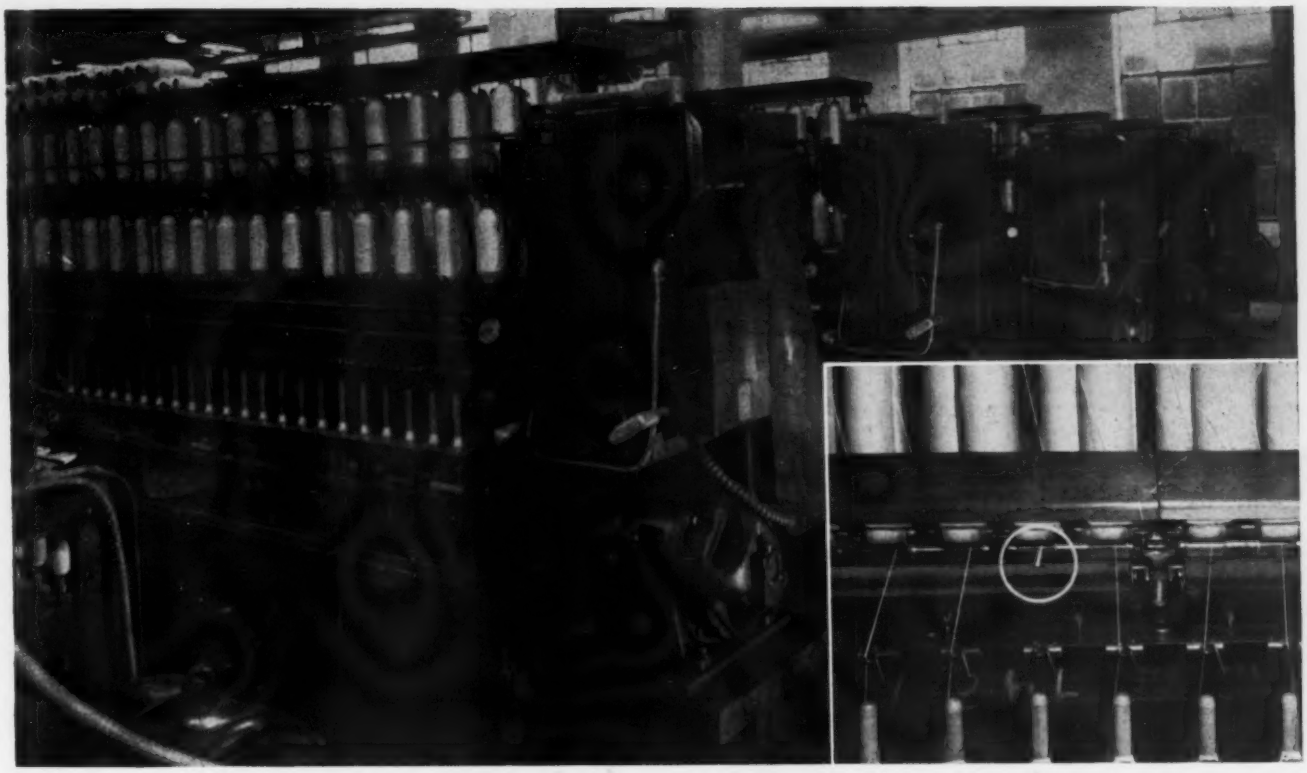
Duty on Seamless Machines Cut. The United States, under the Geneva Agreement, has lowered the import duty on circular knitting machines from 20% to 15% ad valorem. It appears from a study of Schedule XX that no change was made in the classification which covers full-fashioned hosiery knitting machinery and that consequently the rate of duty on such machinery remains at 20% ad valorem.

Misbranding. Because some examples of incorrect marking of substandard hosiery has been brought to its attention, the National Association of Hosiery Manufacturers has clarified the situation by quoting from the FTC Trade Practice Rules for the Hosiery Industry in a recent issue of its *News Letter* and commenting as follows: "It will be noted that hosiery may be classified as 'Irregulars' only in those instances in which the imperfections in the hose are limited to irregularities in dimensions, size, color, or weave, without the presence in the hose of any obvious mends, runs, tears, or breaks in the fabric or any substantial damage to the yarn or fabric itself. It would seem clear, therefore, that hosiery which contains any obvious mends, runs, tears or breaks, et cetera, may not be classified as 'Irregulars,' and, according to the nature of the defect, would have to be classified as 'Seconds' or 'Thirds.' Some samples of hosiery which we have seen, and which have been marked 'Irregulars,'

INVEST WISELY
MODERNIZE
with PNEUMAFIL*

* Reg. Trade Mark

Pneumatic Broken End Collector
★ IMPROVES YARN QUALITY
★ INCREASES PRODUCTION
★ LOWERS COSTS
. . . and the Spinners like it



The forward looking management of this Carolina spinning mill has just made a scientific analysis of the dollars and cents value of Pneumafil Equipment.

Here are its figures:

Original Investment	$40,000.00
Tangible Savings per year	21,300.00
Operating Costs per year	4,800.00
Net Savings per year	$16,500.00
ANNUAL RETURN on $40,000.00 Investment	*41.25%*

You, too, may realize a comparable return. We will be glad to give you complete information on Pneumafil installations for your mill.

Inquiries from South America and Continental Europe should be sent to:
Luwa, S. A., Zurich, Switzerland.

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Tecnotex, S. A.
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Inquiries from Canada:
Ian M. Haldine & Co.
P. O. Box 54
London, Canada

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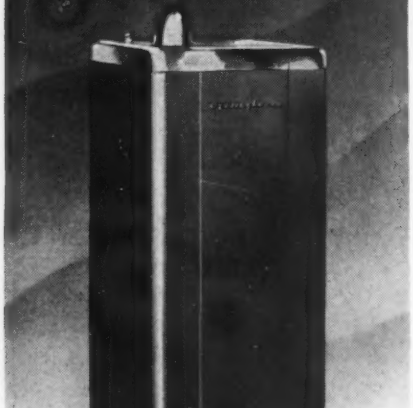
For lint and dust-laden air

it's the NEW

Westinghouse
WATER COOLER
with the
5-year Protection Plan



Model WW14

Water Coolers equipped with *water-cooled* condensers are the only good answer for installations where you have lint and dust-laden air. Water being used to cool the condensers, rather than air, maintains full refrigeration capacity under these trying conditions. Standard equipment on Models WW14, WW22 and the special explosion-proof Model WWE14.

A Capacity for Every Need

For installations where air cooling is permissible, Westinghouse provides four other models. Everything from a Bottle Cooler to six Pressure Coolers . . . designed to meet your individual water cooling problems . . . a capacity for every need. All occupy only 14″ by 14″ of floor space.

Your local Westinghouse Supplier will be glad to give you full details about these new 1948 Water Coolers.

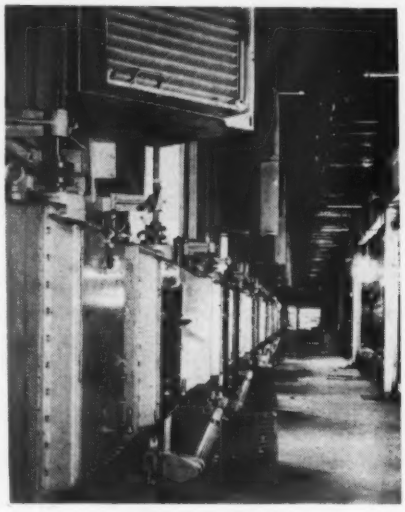
WESTINGHOUSE ELECTRIC CORPORATION
Electric Appliance Div., Springfield 2, Mass.

Westinghouse
WATER COOLERS

have contained obvious mends or other substantial irregularities and would indicate that the manufacturer of such hosiery was using the term 'Irregulars' in place of 'Seconds' or 'Thirds,' as the case might be."

Offers Glass Patents. Owens-Corning Fiberglas Corp. of Toledo has offered for nonexclusive licensing 181 patents relating to the manufacture and application of glass fiber. The company owns a large portion of the patents in the field. Twenty-four are offered royalty-free. These cover fibrous glass applications and are available on payment of a $5 fee. The remaining 157 patents cover methods of manufacture, and presumably would be offered on a royalty basis not exceeding 5% of net cost of production.

Fire Control for Stored Cotton. A simple method of making stored baled cotton resistant to ordinary sources of ignition by dusting the surfaces with sodium bicarbonate powder, much as crops are dusted for insect control, has been suggested by W. E. Peterson, engineer, of Associated Factory Mutual Fire Insurance Cos. Preliminary tests at the experimental station of Factory Mutual Laboratories, Norwood, Mass., show that the new dusting method is effective in preventing ignition from small external sources such as sparks or match flames.



AMERICAN VISCOSE CORP. — Battery of acetate spinning machines in the new spinning room being added to the company's Meadville, Pa., plant. Capacity of the plant, which makes acetate rayon, will be increased 40% when the new facilities are in production at the end of 1948. The new buildings, which add 7 acres of floor space to the existing 25 acres, have been completed; and machinery installation is under way. Yarn from 45 to 300 den. will be made; packages will range from 2-lb. cones to 800-lb. beams. The production of Vinyon at Meadville will also be increased.

ADMIRAL RICHARD E. BYRD visits the Reeves booth at National Heavy Outerwear Exhibition. Admiral Byrd, a member of the board of directors of Reeves Bros., is holding a parka-type garment of Byrd cloth which he wore on his last expedition to the Antartic. Reeves mills are the manufacturers of this cloth.

N. E. Foundation at Half-Way Mark. Abbot Stevens, general chairman of the New England Textile Foundation's second campaign to raise $250,000 for the benefit of the four textile schools in New England, announced that 24 days after the opening of the campaign on Oct. 28, 79 gifts and pledges had been received for a total of $110,385. Largest single gift received to date is $20,000, while the average gift is $1,397.

New Bedford's 50th. The Fiftieth Anniversary of the opening of New Bedford Textile Institute is to be observed in May, 1948. The date will be announced later. Graduates who have not recently received alumni notices should send present-day addresses to Edmund Dupre, corresponding secretary, N.B.T.I., New Bedford, Mass., so that they may be advised regarding details of the forthcoming reunion of alumni.

For Chemical Education. Warwick Chemical Foundation, which was formed for the purpose of setting up memorials to the memory of three members of Warwick Chemical Co., West Warwick, R. I., killed in World War II, announced endowments to three colleges recently. Awards of $3,000 each were made to Lowell Textile Institute, Lowell, Mass., in memory of Walter Nowicki; Clemson College, Clemson, S. C., in memory of Manfred Caranci; and Philadelphia Textile Institute, Philadelphia, in memory of Walter W. Lane. The principal is to be held and the income is to be used to promote chemical education.

AIR EQUIPMENT TO HELP YOUR BUSINESS

GET the Air YOU PAY FOR!

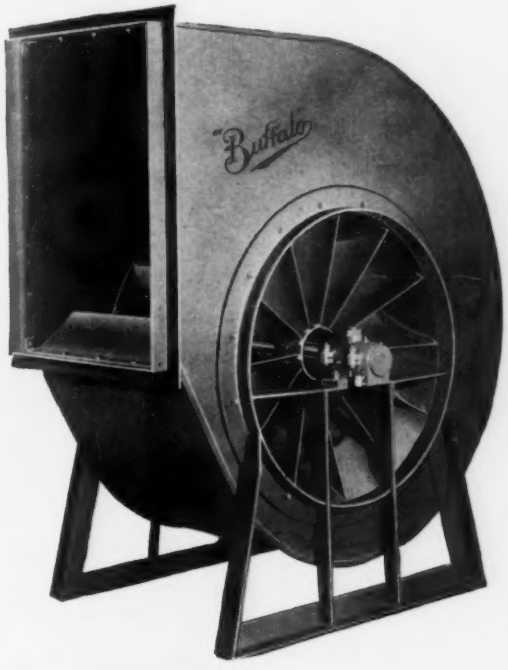
WITH limit-load REG. U.S. PAT. OFF. FANS, RATED AIR DELIVERY IS ASSURED

● When You buy a fan, buy more than just a housing, rotor, shaft, motor and mounting! Buy actual, on-the-job air delivery—a definite number of cubic feet per minute! With "Buffalo" LL Fans, you can be sure of this. All "Buffalo" capacity ratings are certified — and exhaustive test have demonstrated that the "LL" design gives rated capacity on the job.

HUSKY, QUIET, EFFICIENT —Non-Overloading!

"Buffalo" LL Fans are quality-built in every part. Housings, rotors, shafts and bearings are properly proportioned for their service. Blades are designed to handle the most air with least power. Rotors are dynamically balanced for vibrationless operation.

FACTS AND RATINGS ON THE FAN YOU NEED — IN BULLETIN 3339— WRITE FOR YOUR COPY



BUFFALO FORGE COMPANY

184 Mortimer Street Buffalo, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

FANS by "Buffalo"

EQUIPMENT FOR

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- ★ HEATING
- ★ COMFORT COOLING
- ★ PROCESS COOLING
- ★ AIR TEMPERING
- ★ AIR WASHING
- ★ EXHAUSTING
- ★ BLOWING
- ★ FORCED DRAFT
- ★ INDUCED DRAFT
- ★ PRESSURE BLOWING
- ★ CLEANING
- ★ DRYING

CUTTING AIR COSTS IN EVERY BRANCH OF INDUSTRY

COTTON MILL MEN
SEE EYE TO EYE
(CI-41) WITH US

View of the CI-41 Eye, regular wind, showing the thread holding hook

CI-41X Eye, reverse wind

The new CI-41 shuttle eye, with the inner hook and the outside lock, marks another outstanding Watson-Williams shuttle improvement. Already a score of cotton mills are acknowledging the quick threading qualities of this new eye, and the surety with which the outside lock keeps the thread constantly in place. Ask your Watson-Williams representative to show you the new CI-41 eye.

WATSON-WILLIAMS MANUFACTURING CO.
MILLBURY, MASS.

SOUTHERN REPRESENTATIVES: Watson and Desmond, Box 1954, Charlotte, N. C., John W. Littlefield, 810 Woodside Bldg., Greenville, S. C., Walter F. Daboll, Jefferson Bldg., Greensboro, N. C. **WESTERN REPRESENTATIVE:** Arthur J. Bahan, P.O. Box 245, La Porte, Indiana. **NORTHERN REPRESENTATIVE:** Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

NEWS ABOUT Suppliers

Whitin Machine Works, Whitinsville, Mass., has officially opened its new plant on Dowd Road at Southern Railroad in Charlotte, N. C. The building is 200x242 ft., with red-brick walls and limestone trim. Offices are on two floors, plant on one. A spur track facilitates rail shipments, both in and out. Fluorescent lighting is used, and the offices are air-conditioned. Space has been assigned for the development of an Experimental & Research Dept. for making tests and demonstrations. There is additional land behind this new plant to permit future expansion as needs arise. The building was designed by J. E. Sirrine Co. and constructed by McDevitt & Street. The first factory branch established in Charlotte by Whitin began in 1932 with 18 machines and three men; today the company has 190 machines and a staff of 125 men. Robert T. Dalton and William H. Porcher, who have represented Whitin in Charlotte since 1919, have offices in the new edifice. Official opening took place Nov. 21. Those present from Whitinsville included E. Kent Swift, chairman of the board; J. Hugh Bolton, president; R. J. McConnell, Harry Moss, and F. E. Banfield, Jr., vice presidents; S. R. Mason, secretary and manager of repair sales; R. G. McKaig, assistant manager of repair sales; George F. McRoberts, advertising manager; M. W. Keeler, sales representative; and Henry R. Bailey, supervising engineer.

***WILLIAM B. DePASS** sales manager, Interchemical Corp., Textile Colors Div., Fair Lawn, N. J., has been elected as divisional vice president. Mr. DePass joined the Textile Colors Div. (then Aridye Corp.) in 1939 as a technical representative. Later he became district manager of the southern district, and last year was appointed sales manager. Mr. DePass began his textile career with Southern Bleachery & Print Works and later was with Ware Shoals Mfg. Co.*

***THOMAS F. HAIGH** has been appointed to the sales organization of the Florence Thread Co., Riverside, N. J., to cover Philadelphia and New Jersey. Mr. Haigh formerly represented Boger & Crawford for 16 yr. His headquarters will be Riverside, N. J.*

U. S. Bobbin & Shuttle Co., Lawrence, Mass.—Stock control of this company has been sold to Anthony D. Duke. At a meeting of the board of directors, John G. Jackson, Jr., John Sculley, Jr., Gerald Finsen, all of New York, and Anthony D. Duke were elected to the board replacing Francis E. Lynch, Ira M. Jones, William T. Skinner, Jr., and Edmund O'Callaghan. Following are the new officers: John G. Jackson, Jr., chairman; William J. McGeough, president and treasurer; John Sculley, Jr., vice president; Wesley G. Carlson, secretary. Arthur D. Roper, Johnson City, Tenn., Gerald Finsen, and Anthony D. Duke make up the complete board of seven members.

National Ring Traveler Co., Providence, R. I., has appointed H. B. Askew as southern agent. He will move from Griffin, Ga., to Charlotte,

"WHERE *Good Connections* COUNT"

A BOY
THAT DOES A MAN'S WORK
—saving time—power—money

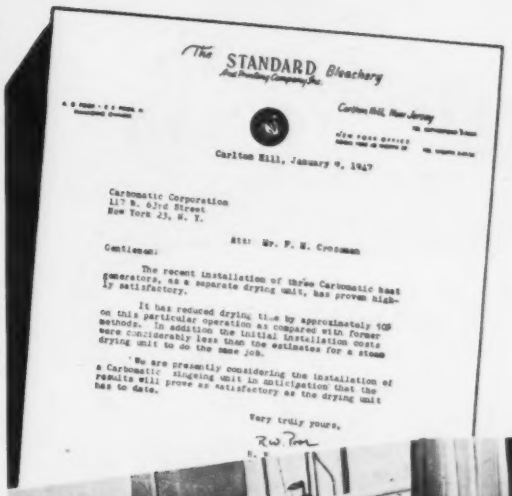
The ALL PURPOSE *Ball Bearing* ROTARY UNION for paper mill rolls and other steam heated cylinders is hardly more than a handful for size yet it performs a mighty job in cutting installation and service costs.

It is small because the ball bearing unit and spring loaded seal eliminate cumbersome friction-consuming parts; and because it is small it eliminates the need for complicated piping and supports. You simply screw the union into the rotating member and attach the flexible hose to the steam or coolant supply.

OTHER SAVINGS: *Saves power,* very low friction drag; *saves machine down time,* quick and simple connecting and disconnecting. *Saves maintenance,* no leakage of gas or liquid under pressure. Entirely unlike anything else in the field. Thousands already in use. Plain or syphon heads. Ask for Catalog 350.

PERFECTING SERVICE COMPANY
6140 Cottage Grove Ave., Chicago 37, Ill.
Agents in principal cities and Canada

ALL PURPOSE
Ball Bearing
TRADE **ROTARY UNION** MARK



The STANDARD Bleachery

Carlton Hill, January 9, 1947

Carbomatic Corporation
117 E. 63rd Street
New York 23, N. Y.

Att: Mr. F. H. Crossman

Gentlemen:

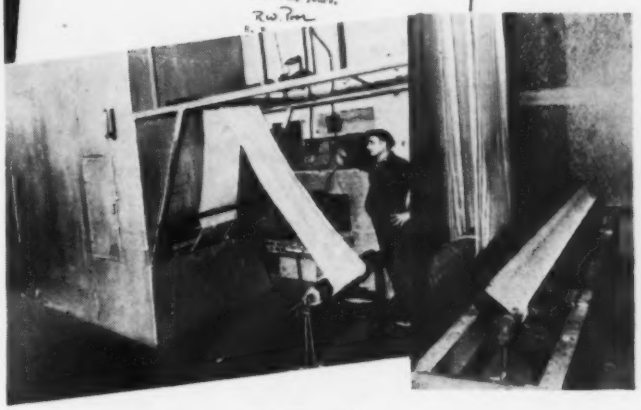
The recent installation of three Carbomatic heat generators, as a separate drying unit, has proven highly satisfactory.

It has reduced drying time by approximately 50% on this particular operation as compared with former methods. In addition the initial installation costs were considerably less than the estimates for a steam drying unit to do the same job.

We are presently considering the installation of a Carbomatic singeing unit in anticipation that the results will prove as satisfactory as the drying unit has to date.

Very truly yours,

R. W. Poe



50%
REDUCTION IN DRYING-TIME BY CARBOMATIC INFRA-RED

• By no means unusual is this performance record of the gas-fired Carbomatic Infra-Red radiant heat generators installed in Standard Bleachery's dry-box. Throughout Textile drying, polymerizing, slashing, printing, preheating, and other heat-processing operations, Carbomatic Infra-Red has brought remarkable economies and efficiencies to scores of mills. CARBOMATIC pioneered and perfected the use of modern infra-red equipment in the Textile industries.

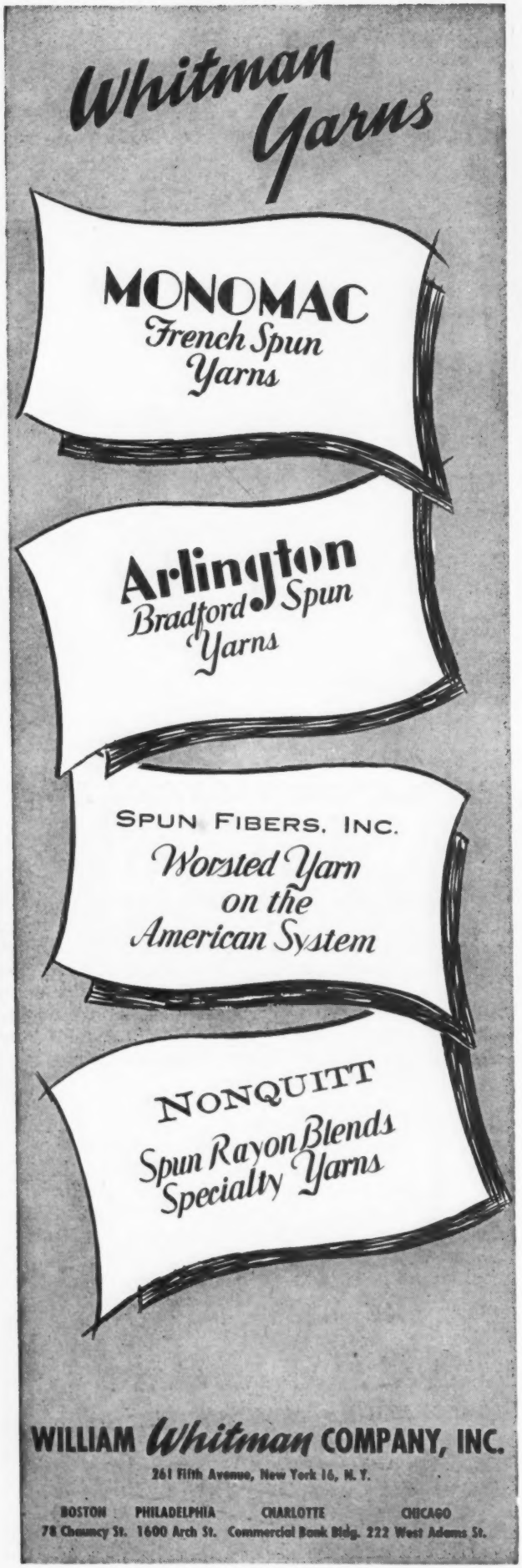
Take Carbomatic Infra-Red Singeing Units, for instance. They permit cloth speeds up to 300 to 500 yards per minute, singeing both sides of the fabric at one time—and handling cloth of any weight or width. Rewinding is eliminated. No scorching of the fabric—with subsequent weakening of fibers—is possible.

Write for Bulletin TW-1, discussing Carbomatic gas-fired and electric types of Textile infra-red equipment.

CARBOMATIC
CORPORATION • *INFRA-RED DIVISION*
24-81 47th Street
Long Island City 3, N. Y.

IF IT'S INFRA-RED — BE SURE IT'S

IN CANADA
Canadian Textile Engrg. Ltd.
980 St. Antoine St., Montreal



JAMES HUNTER MACHINE CO., North Adams, Mass., celebrated its 100th anniversary on Nov. 22. On the afternoon of that day, open house was held at the plant and in the evening a dinner for employees. Above are shown the principals at the center of the speaker's table. Left to right they are: Richard A. Hunter, company vice president; James T. Hunter, president; James H. Hunter, vice president; Governor Robert F. Bradford, of Massachusetts. James T. Hunter represents the fourth generation of his family to hold the presidency of the company since it was founded by James Hunter in 1847 on a site opposite the present plant. The two vice presidents shown are his sons. Honor guests at the dinner included Governor Bradford, local business men, labor-union representatives, the Mayor of North Adams. Pointing to James Hunter Machine Co. as a typical example of fine labor relations, Governor Bradford said Massachusetts has had fewer hours of work stoppage than any other state in the union.

N. C., where he succeeds L. E. Taylor, who has been made general manager of the company with headquarters at the main offices in Providence.

Percy A. Legge, Boston, Mass., has added A. W. Metcalfe, formerly with the "Contro" Div. of Firestone Industrial Products Co., to its sales organization. Percy A. Legge is selling agent for Firestone's "Contro" and bare rubber thread.

Owens-Corning Fiberglas Corp., Toledo, Ohio, has established the Fiberglas Textile Div. at 16 East 56th St., New York, and transferred the Fiberglas Textile Products Development Laboratory from Newark, Ohio, to the Fiberglas plant at Ashton, R. I. The textile division in New York will be staffed largely by personnel now employed in the Fiberglas Yarns Div. in the firm's general offices at Toledo. Basic research and development of textile fibers, as well as experimental work in applications of other types of Fiberglas materials, will continue in the company's general research laboratories in Newark, Ohio.

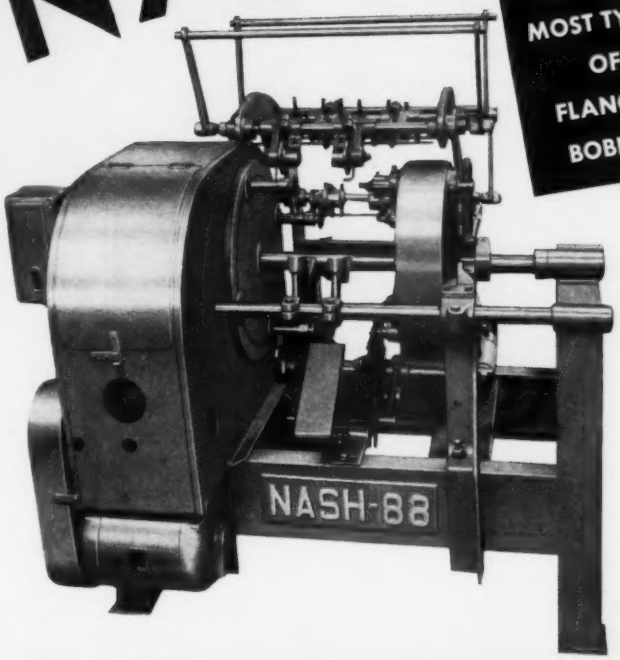
American Cyanamid Co., New York, has appointed Miss Bernice S. Bronner as assistant to G. C. Ramey, advertising manager of the Textile Resin Dept. She will make her headquarters at the firm's New York office, 30 Rockefeller Plaza. Miss Bronner has lately been with the American Standards Association and was previously for 5 yr. head of the textile laboratory at Good Housekeeping Institute. She is secretary of the American Association of Textile Technologists; vice chairman of the membership committee, American Association of Textile Chemists & Colorists, New York section; and a member of the American Home Economics Association.

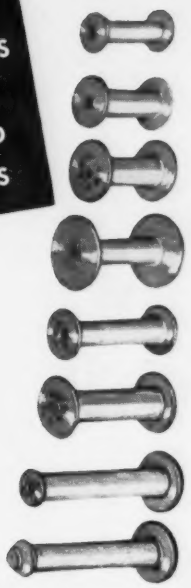
Arnold Hoffman & Co., Inc., Providence, R. I., has recently purchased a Beechcraft twin engine, 5-passenger plane for use by company executives and representatives in travelling from Providence to the Charlotte plant, to various branch offices, and to visit customers located at a considerable distance.

Henderson Foundry & Machine Co., Hampton, Ga., has been merged with the **Southern States Equipment Corp.** and both will operate under one management. Southern States has been operating the foundry for the last 7 yr. The merged company is in a position to provide textile, mechanical, and electrical engineering, together with manufacturing and construction services. Offices of the com-

the New NASH "88" Automatic BOBBIN REFINISHER

HANDLES MOST TYPES OF FLANGED BOBBINS





● Keeps your bobbins in perfect condition. Abrasive action takes place on barrel portion inside of flanges and top radius of flanges. Separate burnishing of flanges produces a highly-polished surface, assuring a better run-off of yarn. This New Nash "88" sands and burnishes *10 bobbins per minute* to a fine finish of uniform quality. Saves labor, requires minimum setup time . . . low maintenance cost. *Pays for itself quickly*. The No. "88" has all the qualities of our larger bobbin refinishers, but is designed for textile mills requiring less capacity.

Write for complete descriptive literature

J. M. NASH COMPANY

2360 N. 30TH STREET, MILWAUKEE 10, WISCONSIN

SPECIAL FINISHING MACHINES · NASH · SINCE 1890 ·

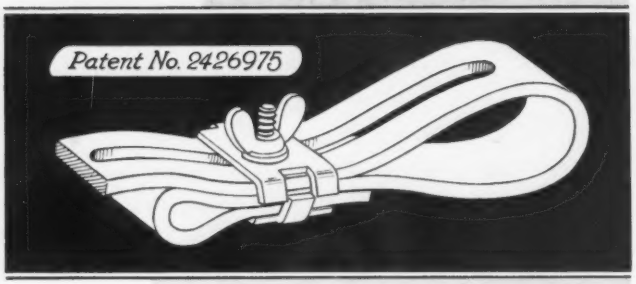
MACBETH COLOR MATCHING SKYLIGHTS

Textile dyers, finishers and colorists know the Macbeth Color Matching Skylight is a necessity for efficient color matching. Natural daylight at its best, any hour of the day, any day of the year. We will gladly help you with your color matching problems, without obligation.

MACBETH CORPORATION

227 WEST 17th STREET, NEW YORK 11, N. Y.

NEW JACK STRAP



and CLAMP COMBINATION

Gives Faster, More Efficient Loom Production at Lower Cost

Production efficiency hits a new high with this new, accurate jack strap. The patented combination permits absolute accuracy in adjustments down to 1/64"—and then protects that adjustment against vibration with an iron grip.

Put this efficiency expert to work for you today. You will save time, money, labor. Thoroughly tested and approved by leading mills. Write, wire or phone for further details.

Exclusively by

W. D. DODENHOFF CO., Inc.

GREENVILLE, S. C. MAIN OFFICE — MAYWOOD, N. J. EASTERN DIVISION

pany are Olan Richardson, president; W. C. Mitchell, vice president and treasurer; H. A. Stewart, secretary; C. W. Walter, sales manager of the textile division, and T. A. Burdeshaw, sales manager of the electrical division.

United States Rubber Co., New York, has appointed J. E. Rutter as sales development manager of its Lastex Yarn & Rubber Thread Div. He has been with the rubber company for 27 yr.

Carrier Corp., Syracuse, N. Y., has lately enlarged its facilities at 248 North College St., Charlotte, N. C., where it will now combine the functions of sales, engineering, construction, industrial heating, dealer, and service. The office will still report to the Atlanta district office. R. S. Fullerton is manager of the Charlotte office; W. H. Reed is head of industrial heating; U. H. Johnson, in charge of construction; W. L. Sammons, in charge of dealer sales.

Fabric Research Laboratories, Inc., Boston, Mass., has appointed Dr. Milton Platt as assistant director of research. He joined the firm in August, 1946, and has been working on the application of stress-analysis techniques to textile problems.

E. I. du Pont de Nemours & Co., Wilmington, Del., has named L. R. Blackhurst, Jr., who has been with Du Pont's nylon sales organization since 1940, as manager of the Philadelphia district office. He succeeds R. M. Horsey, who resigned to become executive vice president of the Orange-Crush Co., Chicago.

Monsanto Chemical Co., St. Louis, Mo., has appointed Edmund Greene, formerly of Cambridge, Mass., as sales promotion and advertising manager of the Merrimac Div., Everett, Mass. Prior to joining Monsanto last June, he had been employed for 8 yr. by Rohm & Haas, Philadelphia. John J. Healy, Jr., assistant general manager of the Merrimac Div. of Monsanto, has been elected a director of the American Institute of Chemical Engineers for the next three years.

Celanese Corp. of America, New York, has announced that all activities formerly conducted by various manufacturing and sales subsidiaries were taken over by the parent organization on Dec. 1. The subsidiaries affected are: Celanese Co., Inc.; Celanese Plastics Corp.; Celanese Chemical Corp.; Celanese Export Corp.; Tubize, Inc.; Staunton Textile Corp.; Bridgewater Textile Corp.

***DR. DAVID M. MUSSER** has joined the staff of Onyx Oil & Chemical Co., Jersey City, N. J., as head of the Textile Research & Development Div. of the laboratories of this firm. He was an industrial fellow at Mellon Institute for 5 yr. From 1942 to 1946, he was senior chemist in the research laboratories of Pacific Mills; and, until acceptance of his new activity with Onyx he was senior chemist in charge of research on textile finishing treatments with Deering Milliken & Co.*

Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J., has completed the first production unit of its new Willow Island, W. Va., plant; and operation began in December. A second large unit is scheduled for operation this month. D. H. W. Felch is plant manager and J. W. Dykes, production manager.

Yale & Towne Mfg. Co., Philadelphia Div., Philadelphia, Pa., has opened a new building at 205 East 43rd St., New York, with complete materials-handling technical and sales services, to repair, service, and display its complete line of chain and electric hoists, hand-operated and motorized handlift trucks, powered industrial trucks and tractors, and industrial dial scales. Samuel W. Gibb, general sales manager, has appointed Carl E. Lang, regional manager; Robert J. McGreevy, regional sales manager; Charles K. Drury, Metropolitan manager.

and in the new year

. . . as in many years past, millions of discriminating, style-conscious ladies will wear hosiery "*DuraBeau*" *finished* — hosiery that is flatteringly sheer, mistily soft and dull — hosiery that will give "miles more wear," because it is beautified and life-lengthened by the famous *film of protection*, which "*DuraBeau*" imparts.

DuraBeau
Reg. U. S. A. and Canada
TEXTILE FINISHES

SCHOLLER BROS., INC.

Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.

WALDRON Processing Machines

For Textile

COATING • TREATING
PRINTING • EMBOSSING
COMBINING • FESTOONING

and other processing operations

WALDRON machines are part of the picture of the fascinating new materials that are setting new standards of converting skill. Beauty, utility and durability are being imparted to fabrics with the aid of these modern machines. Investigate the possibilities for your product. Write for detailed information.

1 Waldron 4 Color Engraved Roll Printer.
2 Waldron Reverse Roll Coater.
3 Waldron Machine Line for Plastics Treating.
4 Waldron Centennial Embossing Machine.

JOHN WALDRON CORP.
NEW BRUNSWICK, NEW JERSEY
BUILDERS OF QUALITY MACHINES SINCE 1827

DON'T SWEAT OVER WET PLANT DETERIORATION ...RUST OR FUNGUS

STOP THEM WITH AMAZING DAMP-TEX ENAMEL

The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

Walter F. Randall, the Philadelphia Div. associate director of field activities in charge of the New York, New England and New Jersey area, will also be located in the New York branch building. The company plans to establish, in each major industrial market of the country, not only experienced sales engineers but also a well-equipped materials-handling maintenance garage and showroom.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., in 1947 completed a 100-yr. record of engineering and manufacturing that has produced one of the most diversified lines of major industrial products in the world. Started in 1847 by Charles Decker and James Seville as a finisher of French burr mill stones to help equip the flour mills in Milwaukee, Allis-Chalmers represents an organization formed from 16 separate firms which today is supplying more than 1,600 different products to industries all over the world. Expansion into the fields of power-generation, power-distribution, and power-utilization equipment was conceived by Edward P. Allis, who with two other men, acquired Decker & Seville in 1861.

Dow Chemical Co., Midland, Mich., has organized the Saran Lined Pipe Co. to act as exclusive distributors for Dow's recently developed specialty pipe and fittings for use where highly corrosive materials are handled in manufacturing processes. The product is expected to be of special use in chemical, pulp, paper, and synthetic textile manufacturing. S. H. Blackmore is sales manager of the Saran Lined Pipe Co.

Minneapolis-Honeywell Regulator Co., Minneapolis, has appointed Roy H. Warmee as sales manager of the Moduflow Div. He has been sales promotion manager for the company since 1940. He is succeeded in that capacity by John A. Young, who has been serving as assistant in the department.

Hercules Powder Co., Wilmington, Del., has appointed Charles H. Gant, lately manager of its Parlin, N. J., plant to be manager of ethyl cellulose promotion for the company's Cellulose Products Dept., with offices at Wilmington. William H. Morrison, formerly assistant manager of the Parlin plant, is now plant manager.

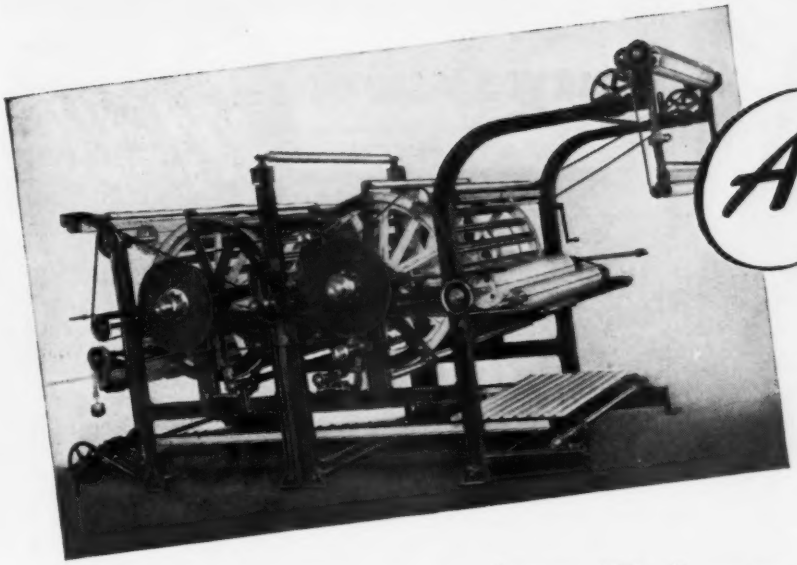
FRANK M. HIGGINS has recently been appointed manager of Reeves Pulley Co. branch office in Atlanta, Ga., located at 990 Gordon St., S.W. Mr. Higgins has been associated with design and installation of Reeves variable-speed equipment for the last 14 yr., for the last 3 yr. as a sales engineer working out of the home office in Columbus, Ind.

Celanese Chemical Corp., New York, has established a western sales office at 819 Santee St., Los Angeles. C. Harry Snell, formerly at the firm's plant in Bishop, Tex., and recently employed by Bristol Laboratories, Syracuse, N. Y., has been named head of the new office.

American Potash & Chemicals Corp., Trona, Calif., has centralized its research facilities in a new $300,000 addition to its administration building. The director of research is W. A. Gale.

Kelite Products, Inc., Los Angeles, Calif., is now producing industrial cleansers at its new plant. Two other buildings on the 7-acre site are used by the firm's subsidiary, Tivit Products Co., which produces cleaning equipment.

Amecco Chemicals, Inc., formerly of New York, has moved manufacturing operations and offices to Henderson, Nev., where the basic magnesium facilities of Hardesty Chemical Co., Inc., have been acquired to produce synthetic detergents, chlorinated hydrocarbons, and synthetic organic chemicals. Robert W. Fredericks and Dr. Ernest B. Rubloff will be sales manager and technical sales development director, respectively.



A Rich Luster

For Your
BROADCLOTHS
KERSEYS
and
FACE FINISHED GOODS

Large 42" diameter cylinders on Gessner's Double Cylinder Slat Gig give four contacts to the cloth, the most efficient size to keep the teasles properly moist for ideal finishing. In many installations, from three to eight gigs are run in tandem to save gigging time and cloth handling. Among many other improvements, Gessner has greatly simplified changing of slats. We would like to tell you more.

DAVID GESSNER COMPANY Worcester, Mass.

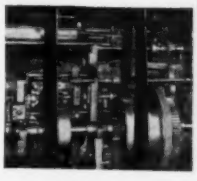
IMPROVED CLOTH FINISHING MACHINERY

Here's BARNES BELTING for greater PRODUCTION

COMBINATION BELTINGS

GAM-OIL AND **BARNES OAK**

Specifically used on shock-load drives for immediate starts with no slipping or stretching. Gam-Oil ply, which has the highest coefficient of friction of any of our leathers, goes next to pulley. This belt is especially adaptable to picker drives which have changing loads.



Mule Drive

REEMAY AND **BARNES OAK**

For condenser drives, eccentric drives, mule drives, spinning-frame drives, Gaulois pulleys and generators. Reemay ply goes next to pulley for high coefficient of friction; oak ply on top, for weight and firmness against shipper and flanged pulleys.

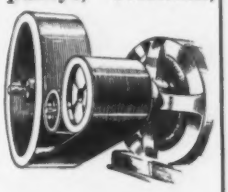
Eccentric Drive

MINERAL TAN AND **BARNES OAK**

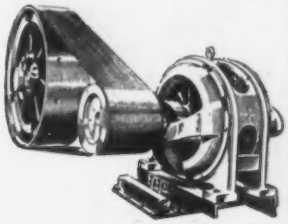
For drives in wetness, excessive moisture, or high humidity conditions. Mineral Tan ply next to pulley does not slip or stretch. Oak ply on top withstands shipper and flange pulleys.

TEXTILE MILL BELTING (Flat or Round)

GAM-OIL Used for longer life on idler, high-speed and opendrives, small pulleys, overloads, shockloads, and short centers. Resistant to oil and heat. Tanned in Gambier by our longtime process. Greater tensile strength than Oak Tan. High transmitting capacity. Specially curried. Very flexible. Hand processed by skilled workmen.



REEMAY Used for longer life on pivoted-motor-base, idler, high-speed and open drives, small pulleys, overloads, shockloads, and short centers. Resistant to boiling water, oil, acid fumes, dry heat to 365°, alkalies, dust. Chrome Retanned. Highest tensile strength. Greater transmitting capacity. Practically free of static electricity. Specially curried.



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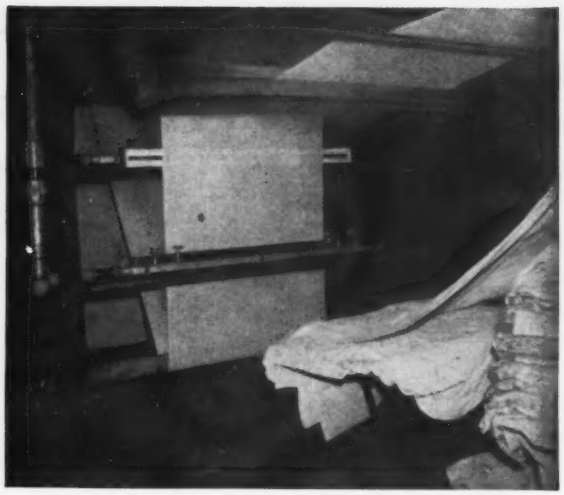

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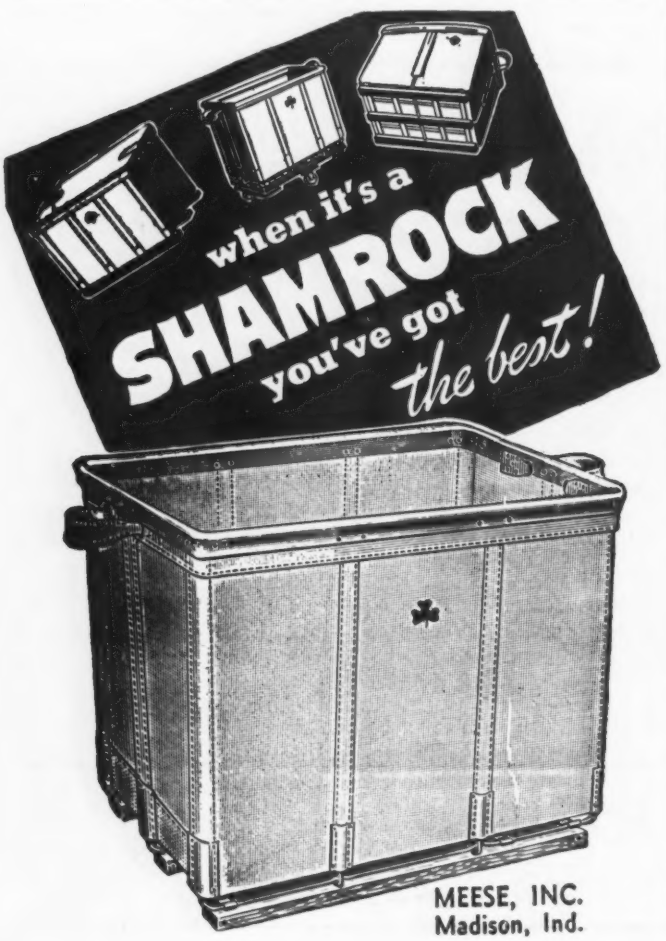


MEESE, INC.
Madison, Ind.

NEWS ABOUT *Mills*

Cotton Mill News

Arkwright Mills Corp., Arkwright, S. C., has purchased four buildings and tract of land at former local government camp known as Camp Croft, and will remodel and improve for warehouse service.

Asheboro Weaving Co., Asheboro, N. C., recently formed weaving mill, plans to add additional 80,000 sq. ft. of floor space to building now under construction. Cost is about $325,000. Work is in charge of S. E. Trogdon, of Asheboro. When first half of building has been completed, operations will probably begin. Project is being sponsored by C. C. Cranford and associates.

Beacon Mfg. Co., Swannanoa, N. C., has leased five large warehouses in Camp Sutton area near Monroe, N. C., to be used for storage purposes. Unit will handle from 40 to 50 carloads of blankets each week. Improvements to structures will be made by Southern Cotton Storage Co., and there is possibility that manufacturing plant may be added at later date.

Beaumont Mfg. Co., Spartanburg, S. C., is installing 80 new looms on ground floor of No. 1 mill. Looms are being installed in space formerly occupied by 22 twister frames which have been sold to Burlington Mills, Inc., Greensboro, N. C. In new twister room, six new twister frames have been installed. Of the new looms, 38 are of 54-in. width.

Bemis Bros. Bag Co., St. Louis, Mo., has purchased 15-acre site in Minneapolis, Minn., for construction of additional plant facilities.

Bibb Mfg. Co., Macon, Ga. Expenditures during year ended Aug. 31, 1947, on renewals and additions to plants amounted to $1,126,902. Further expansion in company's manufacturing facilities are now in progress.

Clark Thread Co. has opened new $1,000,000 warehouse and offices at Atlanta, Ga., to operate as central distributing point for all products of company and associated companies, including J. & P. Coates. Warehouse has floor space 220,000 sq. ft. With opening of Clark Mills in Thomasville and Albany, Ga., transfer of all of company's plants to Georgia was completed. Other Clark mills are in Asworth, Toccoa, Pelham, and the model community of Clarkdale.

Cluett, Peabody & Co., Inc., plans alteration and modernization of plant at North Grosvenordale, Conn. Old machinery will either be replaced with modern equipment or serviced with new parts. Mill itself will undergo considerable alterations.

Dora Yarn Mills Co., Cherryville, N. C., has purchased local tract of land from Children's Home, Methodist Orphanage, of Winston-Salem, N. C.

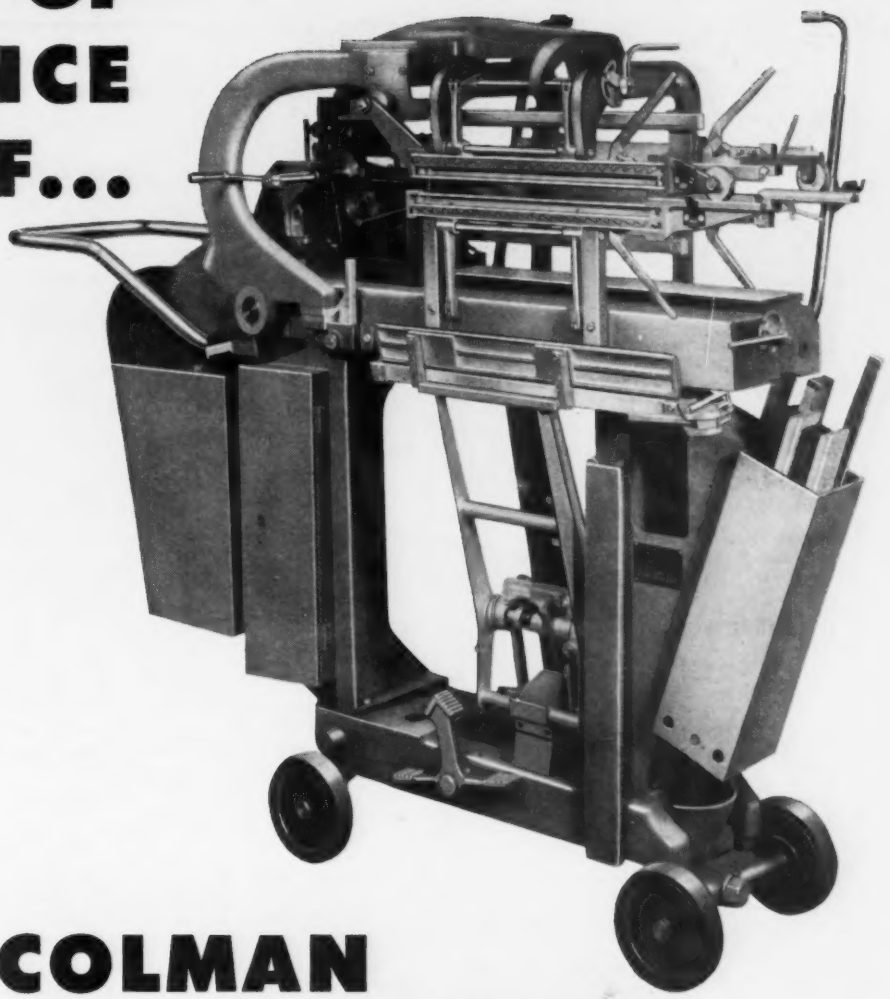
Eagle Co., Columbus, Ga., is new name for former Eagle & Phenix Mills, Inc. Approval of petition to change name of organization which recently sold its mill properties to Fairforest Corp., Clevedale, S. C., has been granted by Superior Court Judge T. Hicks Fort. Eagle & Phenix, headed by D. Abbott Turner, plans to give up its franchise on Jan. 1, and assume new name.

Equinox Mill, Anderson, S. C., is constructing one-story structure of 10,000 sq. ft. to be used as separating room. Additional machinery will be installed and more employees will be hired.

Gate City Mills Co., Atlanta, Ga., has been organized to take over Gate City Cotton Mills, Atlanta. I. C. Milner is president of new firm.

General Textile Mills, Inc., Providence, R. I., has arranged for change of name to Providence Pile Fabric Corp.,

40 YEARS OF EXPERIENCE IS BACK OF...



BARBER-COLMAN WARP-TYING MACHINES

The shop pictures above and below show a few of the skilled mechanics whose experience and aptitudes contribute vitally to the quality and performance of Barber-Colman machines.

REPAIR PARTS AND SERVICE MEN AVAILABLE PROMPTLY

No machine made can function without Service. That is why, since the inception of Portable Warp Tying Machines forty years ago, Barber-Colman has backed these machines with two important Service Departments. One is Repair Parts and the other is Service Men. Repair Parts makes, puts in stock, and delivers the pieces and assemblies that wear out from time to time, and need to be replaced quickly to keep the machines operating. Service Men are skilled and experienced individuals, available on short notice from strategically located centers, who are trained to diagnose quickly the ills of any machine, make necessary adjustments or replacements, and revitalize its productive functions. The forty years of experience which backs the performance and visualizes the developments of Barber-Colman Portable Warp Tying Machines could easily be nullified by inadequate Service. That is why, when you use Barber-Colman equipment, you can be sure you have *good* machines that can be kept operating easily at top efficiency.

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with increase in capital to $100,000.

Goodyear Decatur Mills, Decatur, Ala., has let contract to Rust Engineering Co., Birmingham, Ala., for addition to boiler house, including installation of new boiler and accessory equipment.

Hathaway Mfg. Co., New Bedford, Mass., will purchase buildings and real estate of Naushon Mills, same city, for installation of textile equipment it previously had planned to set up in the Langshaw Mill. Naushon had originally arranged to sell its land and buildings to Crescent Corp. Hathaway is taking over latter's contract. Under sale agreement, Naushon machinery may not be completely removed until April, 1949. However, some of new Hathaway equipment may be put in place by end of this year. Hathaway is making alterations to its plant on Cove Street at cost of $70,000. General contract is in hands of Theodore Loranger & Sons, New Bedford. DesGranges & Steffian, Boston, Mass., drew plans.

Hutmacher Braiding Co., Paterson, N. J., has leased one floor in local plant formerly of Wright Aeronautical Corp., containing about 14,000 sq. ft. of floor space, and will occupy for expansion.

Mills Mill, No. 2, Woodruff, S. C., is installing $80,000 air-conditioning system in weave room. Contract for system has been awarded to Carrier Corp., Syracuse, N. Y. Lockwood Greene Engineers, Inc., is supervising.

Monarch Mills, Union, S. C., has asked bids for erection of one-story addition to be used for office space. J. F. Truluck, Jr., Walterboro, S. C., is architect.

Monticello Cotton Mills, Monticello, Ark., has purchased carding and twisting machinery which is now being installed in plant.

Morowebb Cotton Mills Co., Dallas, N. C., operating 11,000 spindles, was told by Robert J. Gurney, president, to Max Schiffman, New York, N. Y., for an undisclosed sum. This is third Carolina mill to become a part of Schiffman organization. Other units are Macanal Mills, Inc., Salisbury, N. C., and Hamer Spinning Co., Hamer, S. C. Morowebb plant, with 7,168 spindles, is producing 36s to 50s combed-peeler cones, skeins, warps, and tubes; wet and dry twist.

Opp Cotton Mills and **Micolas Cotton Mills,** Opp, Ala., are installing Barber-Colman high-speed spooling and warping machinery. Installation of 400 X-2 Model looms has been completed, and new pickers, cards, drawing, slubbing, and spinning equipment will be installed in the near future. J. L. Channell is general manager.

Orr Cotton Mills, Anderson, S. C., recently purchased by interests of M. Lowenstein & Sons, New York, N. Y., plans expansion program. Excavation for basement floor, 120x125 ft., has been already started. Project is scheduled for completion by Jan. 1, at which time additional machinery and employees will be added. Mill office is also being enlarged.

Puritan Mills, Inc., Roanoke, Va., plans one-story warehouse addition. Cost, about $75,000.

Robinson Yarn Mills, Gastonia, N. C., has purchased 40 spinning frames from Southern Spinning Co., Nashville, Tenn. Yates D. Smith, of Gastonia, N. C., is installing machinery.

Rosemary Mfg. Co., Roanoke Rapids, N. C., has awarded contract for addition to finishing plant to McKoy-Helgerson Co., Greenville, S. C. J. E. Sirrine Co., is engineer.

Southwestern Cotton Mills, Inc., Waco, Tex., has sold its twine mill property to Hollywood Mfg. Co., Dallas, Tex. Purchase price is reported to have been $46,000.

Springs Cotton Mills plans construction of addition to its Fort Mill plant No. 1, Fort Mill, S. C. Structure and machinery will cost in excess of $1,000,000. Building will be two-story and of brick and steel construction. It will house combing, spinning, and weaving machinery. Plant will be air-conditioned. Percale sheets made in this plant will reach the market in 1949.

Standard Tytape Co., Asheboro, N. C., plans two-story addition, of brick-and-steel con-

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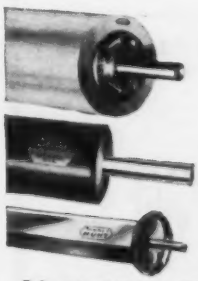

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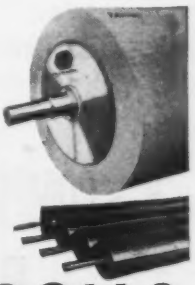
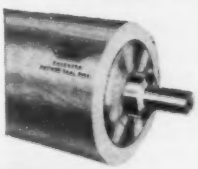
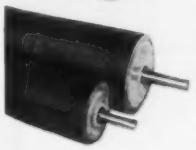


"SHAF-TITE" ROLLS





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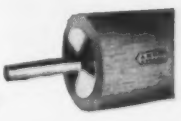

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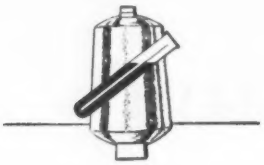

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addition, of brick and steel construction. Production in the new unit will consist largely of printed tape, with an estimated boost of 50% to present output.

Strickland Cotton Mills, Inc., Valdosta, Ga., has let contract to J. N. Bray Co., Valdosta, for new addition and improvements in present building. Cost $139,000, exclusive of equipment.

Townsend Cotton Mill, Anderson, S. C., has been purchased by Harry L. Dawes of Greenville, S. C., who paid $400,000 for all capital stock in company. Mr. Dawes will be president and treasurer and E. H. Johnston, of Greenville, will be secretary of new company. Included in mill property are two-story plant operating 4,232 spindles, several warehouses, and 26 dwellings for employees.

Virginia Mfg. Co. has sold its yarn mill at Fork Shoals, S. C., to Riegel Textile Corp., Trion, Ga., for undisclosed sum. Riegel firm has also purchased spinning mill owned by partnership headed by James S. Briggs of Atlanta.

Weir Mills, Inc., Newberry, S. C., has recently been chartered and will weave 80x80 print cloth. When complete, new firm will have about 100 looms in three buildings and will operate on three-shift basis. Fred J. Weir is president.

Wennonah Cotton Mills Co., Lexington, N. C., has increased production by 15% by addition of basement that gives company an additional 15,000 sq. ft. of manufacturing space. All plain looms have been moved into basement weave room, where tickings are being manufactured, while weave rooms above are manufacturing fancy dress goods. An additional 51 looms have been installed, bringing total number to 440.

Wool Mill News

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., plans new warehouse at Atlanta, Ga., to cost over $125,000, with equipment.

Bigelow-Sanford Carpet Co., Amsterdam, N. Y., has leased local six-story building at 139-41 Main St., and will occupy for expansion.

Bollman Industries, Inc., San Marcos, Tex., is new name of former Blue Bonnet Blanket Mills, recently sold to Bollman Industries. Plant is expected to be in operation shortly following remodeling and installation of machinery.

Charlottesville Woolen Mills, Charlottesville, Va., has closed bids for grading and excavations for proposed additions to mill, and will let contract soon.

Collins & Aikman Corp. plant at Norwood, N. C., is adding air-conditioning equipment in several departments. Work is under supervision of Page Air-Conditioning Co., Inc., Charlotte, N. C.

Essex Textile Mending Co., Lawrence, Mass., Edward Bond, proprietor, is operating main plant and branch at Lowell, Mass., and has third plant with 75 operatives on burling and mending at Manchester, N. H.

Hudson Worsted Co., Hudson, Mass., is constructing new building for carding and combing at a cost of around $400,000. Project is 60% completed. Building will be used for manufacturing wool tops and will be ready for machinery early next year. Project was designed and is being supervised by Lockwood Greene Engineers, Inc.

F. C. Huyck & Sons, Inc., Rensselaer, N. Y., plans new addition, to be known as Building 42. Construction will begin at early date.

Orono, Me.—James Striar has purchased Orono Paper mill and is installing textile equipment for manufacture of woolens.

Rayon & Silk Mill News

Aetna Industrial Corp., New York, N. Y., has completed negotiations for purchase of all outstanding capital stock of Oscar Heineman Corp., Chicago, Ill. Company will operate as Oscar Heineman Corp., division of Aetna Industrial Corp. Donald G. Brewster will be president and general manager.

Bernson Silk Mills, Inc., Buena Vista, Va., expects in-

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improve twist-set
and stitch, leave yarns soft, workable

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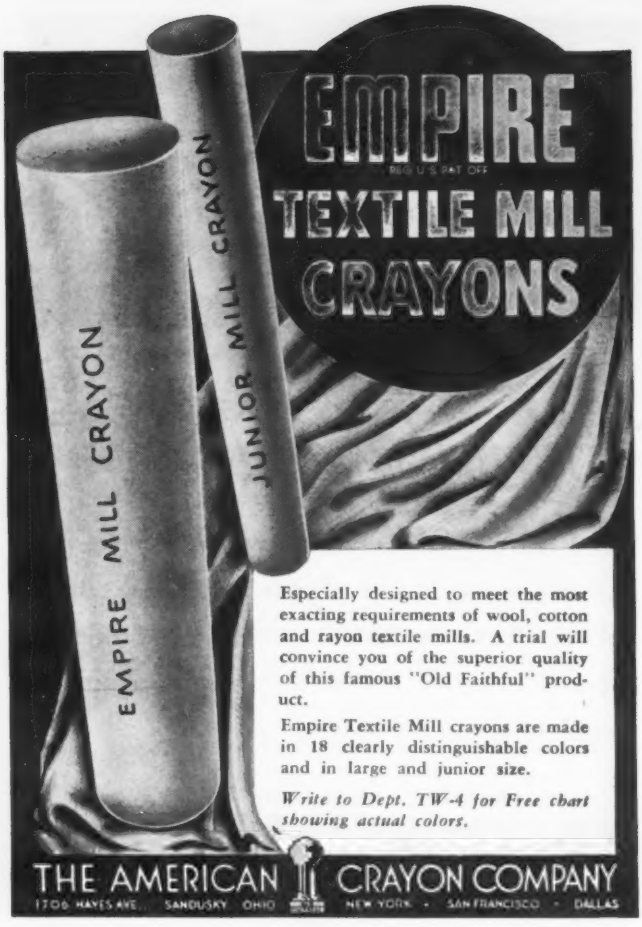
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stallation of new machinery to be completed early next year. Company is replacing practically all old looms.

Pacolet Mfg. Co. and **Deering Milliken & Co.** have obtained a 325-acre site near Pendleton, S. C., for a $4,000,000 plant to produce rayon crepes and combination-yarn fabrics. Plant will be 540x300 ft., one floor, and windowless. Refrigerated air-conditioning will maintain year-round temperature of 78°F.

Raycrest Mills, Inc., Pawtucket, R. I., has commissioned Robert Meikle to prepare plans for one-story brick and steel addition to its mill on Mineral Springs Ave. Cost is to be about $25,000.

River Mills, Inc., Riverpoint, R. I., has leased 28,000 sq. ft. of floor space in Royal Mill, Riverpoint, and will set up rayon weaving mill with about 120 looms. Edward L. Whitford, formerly superintendent of Peerless Mills, Inc., Pawtucket, R. I., is one of owners.

Stanley Mills, Inc., Stanley, N. C., subsidiary of J. P. Stevens & Co., Inc., will complete 80,000-sq. ft. addition to plant by Jan. 1. When building is completed, 200 additional employees will be hired.

West Boylston Mfg. Co., Montgomery, Ala., is ready to resume operations after being closed down for 12 weeks for installation of new machinery. Plant, which formerly manufactured tire-cord fabrics, will now produce weaving and knitting yarn.

Knitting Mill News

Acme - McCrary Hosiery Mills, Asheboro, N. C., plans two-story addition to plant that will measure 75x142 ft. First floor will house 16 30-section full-fashioned machines. Second floor is to be used for looping and seaming operations. Addition will require employment of about 125 additional employees, increasing the total number to 1,000. Work on project is scheduled to get under way immediately with May, 1948, set for completion date.

Amos Hosiery Mill, High Point, N. C., plans erection of brick addition to be used as a boiler room.

Bridgewater Textile Corp., Bridgewater, Va., subsidiary of Celanese Corp. of America, plans to reach one-third of its productive capacity as soon as full complement of machines is installed. Plant, a two-story, brick-and-steel building, was begun in November, 1945.

Brunswick Knitting Mills, San Francisco, Cal., is constructing 28,000 sq. ft. addition for storage space.

Davenport Hosiery Mills, Inc., Chattanooga, Tenn., has begun erection of one-story addition, to cost over $65,000, with equipment.

Diamond Knitting Mills, Newton, N. C., has been sold to Roy Furr and associates by H. F. Reid, one of former owners. New owners took over recently.

Farmers Mill, Inc., Carrollton, Ga., is new hosiery mill now under construction in Oak Mountain community, near Carrollton. Principals are T. J. Lawler, Mrs. Mary Lawler, and Mrs. Edna Harris.

Gastonia, N. C.—Harold Sumner, formerly general superintendent of Wisteria Hosiery Mills, Inc., Gastonia, N. C., prior to its sale to Glenn Mills, Inc., Lincolnton, N. C., will establish new mill at Gastonia for manufacture of women's nylon full-fashioned hosiery.

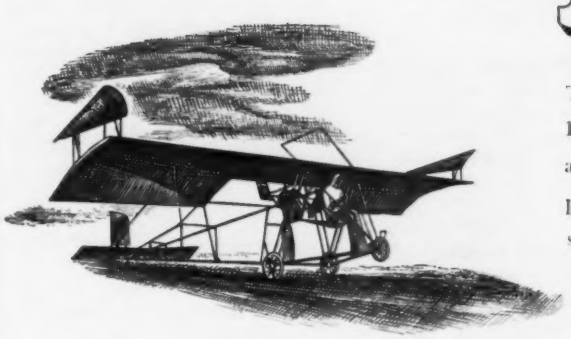
Hampton-Wrenn, Inc., Martinsville, Va., recently organized to knit underwear and other knitted wear, is housed in leased building where operations are now under way.

Hudson Hosiery Mill, Shelby, N. C., has begun work on addition that will double plant's production capacity. J. A. Jones Construction Co., Charlotte, N. C., has contract.

Julius Kayser & Co., Ltd., Sherbrooke, Que., is first mill in Canada to operate FNF high-speed warp-knitting machines. Company has five more ordered for installation as soon as they can be shipped from England.

Melrose Hosiery Mills, High Point, N. C., has recently completed new brick building that will add 30,000 sq. ft. of floor space to present facilities. Second floor of two-story struc-

Famous Firsts



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THE 1ST KNITTING MACHINE to produce an INTERLOCK FABRIC, a special type of rib fabric distinguished for superior softness, warmth and strength, was the S&W Interlock Machine, developed in 1908.

THE 1ST AMERICAN-MADE KNITTING MACHINE to produce LINKS-AND-LINKS patterning in hosiery was the Komet Links-and-Links Machine produced by Scott & Williams in 1939.

THE 1ST KNITTING MACHINE to produce COMPLETE RIBBED TOP half hose and slack sox with single and multiple wrap patterning plus color-in-color effects was the S&W HH-PW Color-in-Color Machine, developed in 1909.

THE 1ST KNITTING MACHINE to produce sheer, perfectly fitting SEAM-FREE nylon women's hosiery was the S&W DANCING TWINS Seam-Free Nylon Machine, introduced by Scott & Williams in 1946.

ALL OF THESE MACHINES made knitting history. They are contributing to the advancement of knitting efficiency and are constantly expanding the market for circular knit merchandise. They are examples of Scott & Williams' leadership in the circular knitting field.

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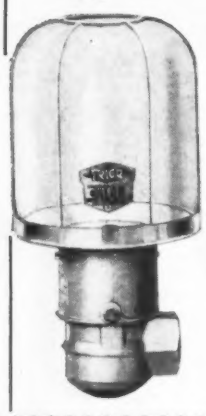

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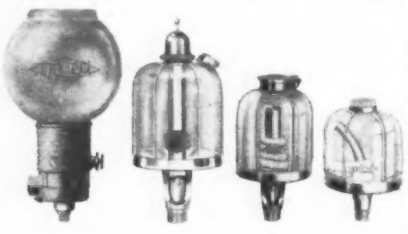

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ture will house knitting department, while lower floor is divided into yarn storage and machine shop. A. N. Hill is general superintendent.

Monogram Knitwear Co., Inc., New York, N. Y., has been chartered to operate mill for manufacture of outerwear. H. H. Schulder, 1450 Broadway, is attorney and representative.

Oxford Knitting Mills, formerly of New York, will move plant to Whitman, Mass., and will locate in section of building of Regal Shoe Co. Plant will manufacture men's hosiery, 60% of which will be purchased by Regal for sale in its retail shoe stores. Remainder will be sold on open market. Plant will employ about 75 when in operation. Dr. F. M. Forrest is owner.

Russell Hosiery Mills, Inc., Star, N. C., has been organized with capital stock of $500,000 to manufacture and sell hosiery. Incorporators include Paul Russell, Blanche Russell, and Alameda Russell.

Sapphire Hosiery Corp. has completed new plant at Telford, Pa., for knitting, seaming, and looping operations of full-fashioned hosiery. This is first step in company's projected expansion program.

Sellers Hosiery Mills, Inc., Burlington, N. C., is constructing one-story addition that will cost about $45,000, exclusive of machinery.

Superior Knitting Mills, Jersey City, N. J., has leased floor in building at 41-32 Morris St., and will occupy for knitted underwear production.

Waldensian Hosiery Mills, Inc., Valdese, N. C., is spending about $733,000 for modernization and expansion program which was begun in late 1945. Program will include additions to plant buildings, repair of equipment, and replacement of old machinery.

Wine-Port Knitting Mills, 410 East 93rd St., New York, N. Y., has been dissolved, and new firm, **Superior Knitting Mills**, 45 Morris St., Jersey City 2, N. J., manufacturers of knitted fabrics, outerwear, and underwear, has been formed. Murray M. Dullman is president. Plant also does commission knitting.

Dyeing & Finishing Plant News

Burlington Mills Corp., Greensboro, N. C., plans to construct large textile finishing plant to be known as Wake Plant, 10 miles north of Raleigh, N. C., on Neuse River. It will cover about 125,000 sq. ft. of floor space, and will cost between $2,500,000 and $3,000,000. Operations are expected to get under way on small scale in July, 1948. Contract for building has been awarded to J. A. Jones Construction Co., Charlotte, N. C. Building will be one-story, of brick and steel construction.

Dutchess Bleachery, Inc., Wappingers Falls, N. Y.—Lockwood Co., Waterville, Me., has offered $450,000 plus cost value of inventories for Dutchess Bleachery.

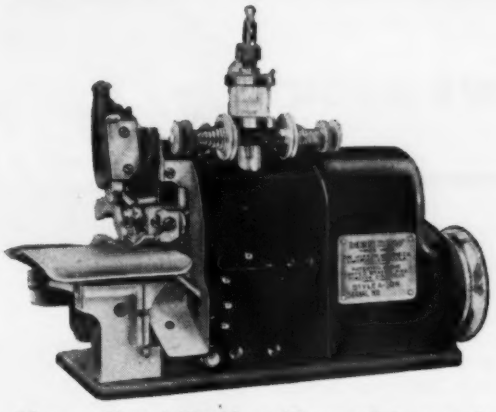
Hugh Grey Hosiery Co., Concord, N. C., has purchased plant and machinery of Concord Knitting Co., Concord, N. C. Purchaser will continue to operate former Concord Knitting plant as its finishing division. Stockholders of Concord Knitting Co., headed by Alex R. Howard, president, recently approved proposal to liquidate company and sell physical assets.

National Dyeing & Finishing Corp., Los Angeles, Calif., has purchased site for new plant on Hayden Industrial Tract in Culver City. Original mill at 941 East 62nd St. was destroyed by fire last July with total damage of about $500,000. New concrete structure will house two-story office section in front and one-story mill and warehouse at rear of lot, with a railroad siding and large parking area for employees. New plant should be ready to start operations next March.

Norwich Knitting Co., Norwich, N. Y., will establish finishing plant at Clayton, W. Va. which will employ about 100.

Slane Hosiery Co., High Point, N. C., is enlarging dye house at cost of $15,500.

Try-Us Textile Processing Co., Brooklyn, N. Y., has leased one-story building, 54,000 sq. ft., now being erected at Secaucus, N. J., and will occupy for plant immediately on completion.



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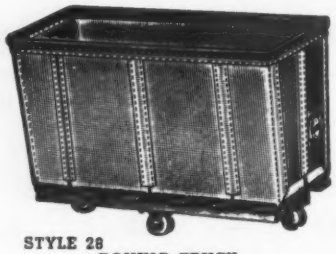

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REPRESENTATIVES WANTED

NEWS ABOUT *Men*

R. Stewart Kilborne, Jr., has been elected president of William Skinner & Sons, Holyoke, Mass., succeeding his uncle, the late William Skinner. **William S. Kilborne,** brother of the new president, was elected vice president. New president is also head of Truhu Fabrics Corp., a Skinner subsidiary; and a director of S. Stroock & Co.

E. F. King has been appointed president of Dominion Burlington Mills, Ltd., Sherbrooke, Que. He is succeeded as vice president by **D. C. Werner,** a director of company, and also president of Burlington Mills International Corp., New York, N. Y.

J. Spencer Love, now chairman of the board of Burlington Mills Corp., has moved his headquarters from Greensboro, N. C., to Washington, D. C., in order to permit him to be in either New York or Greensboro with equal convenience. **J. C. Cowan,** formerly vice president, replaces Mr. Love as president.

Leonard S. Weil has resigned as vice president of Artcraft Hosiery Co., Darby, Pa., and has sold his stock in the corporation.

John Lawrence, of James Lawrence & Co., Boston, Mass., has been elected member of board of directors of Pepperell Mfg. Co., Boston, Mass.

G. Kenneth Pattison has been appointed vice president in charge of production for Textile Mills Co., Chicago, Ill.

Donald Warnick has been appointed executive vice president of South Carolina Mills, Spartanburg, S. C.

Ralph M. Holt has resigned as director, secretary, and treasurer of May McEwen Kaiser Co., Burlington, N. C. Resignation also affects his position as director, secretary, and treasurer of Sidney Knitting Mills and Grabur Silk Mills, Graham, N. C.; Dothan Silk Hosiery Co., Dothan, Ala., and director of Vance Knitting Mills, Kernersville, N. C., and as trustee of May McEwen Kaiser Foundation. Mr. Holt is president of Holt Hosiery Mills, Inc., Burlington, N. C.

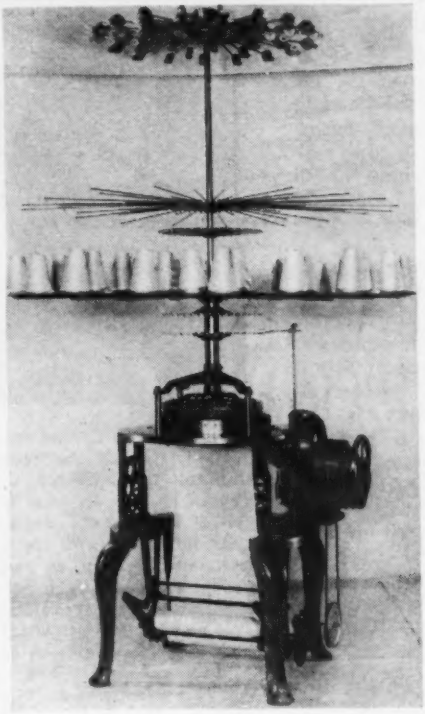
C. NORRIS RABOLD, head chemist for Union Bleachery, Greenville, S. C. and consulting editor of TEXTILE WORLD, joined the Erwin Cotton Mills Co. chain on Jan. 1 as director of chemical research. He will make his home in Coolemee, N. C. He is a vice president of the AATCC.

J. L. Jacob, affiliated with Pilot Full-Fashion Mills, Inc., Valdese, N. C., for 15 yr. has been appointed second vice president of company, succeeding **C. C. Keller,** who resigned recently.

Charles B. Faircloth, assistant secretary and assistant treasurer of May McEwen Kaiser Co., Burlington, N. C., has resigned to join Springs Cotton Mills, Lancaster, S. C., as assistant to treasurer. After month's vacation in Florida, Mr. Faircloth assumed his new duties Jan. 1.

Donald Comer, chairman of Avondale Mills, Sylacauga, Ala., has been selected as the "South's Man of the Year" for 1947 by *Dixie Business,* Atlanta, Ga.

Dr. Charles R. Fordyce, superintendent of the manufacturing experiments department



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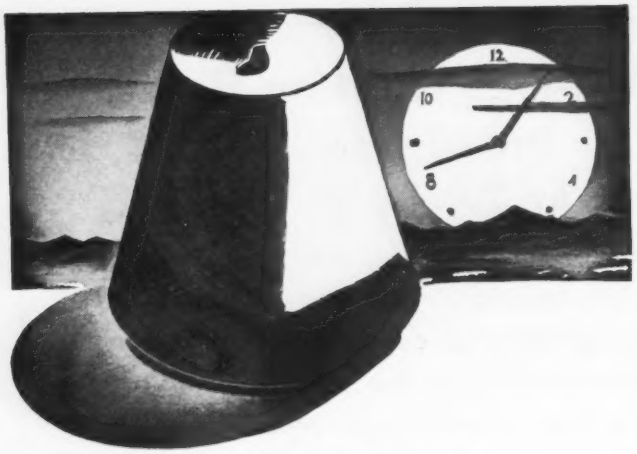

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NOVELTY YARNS

NEWS ABOUT MEN

of the Eastman Kodak Co., Rochester, N. Y., has been elected chairman of the Div. of Cellulose Chemistry of the American Chemical Society. Dr. Fordyce succeeds **Dr. Milton Harris**, head of the Harris Research Laboratories, Washington, D. C.

Chester C. Chilson has joined William Whitman Co., Inc., as manager of the Noils & Wastes Dept. which was opened by Whitman in Boston on Jan. 1, 1948. **Robert M. Bent, Jr.,** will assist Mr. Chilson in the sales of noils and wastes. Mr. Chilson comes to Whitman from Forté, Dupee, Sawyer Co. Mr. Bent has been associated with his father in the Robert M. Bent Co., Inc.

J. B. Powell, of Lexington, N. C., has been re-elected chairman of the northern North Carolina-Virginia division of the Southern Textile Association. **Walter Vincent**, of Danville, was named vice chairman; **Howard Barton**, of Spray, re-elected secretary. The executive committeemen named were **N. A. Carpenter**, of Cooleemee; **Ray Butler**, of Spray; and **Sherman Basinger**, of White Oak.

Albert J. Huber has been appointed director of fabric development and research for Verney Fabrics Corp., New York. For the last 3 yr., Mr. Huber has been engaged in a similar capacity with Southeastern Cottons, Inc. Before that he was with American Viscose Corp. in its fabric development department.

Lewis Larrick is now in the Physical Sciences Div., Mechanics & Materials Branch, office of Naval Research, Washington. He is specializing in the field of textile research and development.

Charles Mathieu, Jr., has resigned as director of information for the International Wool Secretariat, New York, to act as a free-lance consultant on promotion and publicity.

Malcolm Schade has been elected assistant treasurer of Alderman Top Mfg. Co., Holyoke, Mass., succeeding **Harry Sinclair**, who retired recently.

Peter Haynes, who was general manager of all woolen and worsted mills of Deering Mil-

EARL E. BERKLEY, fiber research authority, joined the technical staff of the National Cotton Council on Dec. 1. After he received his doctor's degree in 1933, he worked with the Cellulose Research Corp. on purification of cellulose. He joined the Department of Agriculture in 1936, where his attention has been devoted to research on the natural cellulose fibers, predominately cotton. In his new position, Dr. Berkley will be available for cooperation with textile laboratories in their research work on cotton.

liken & Co., has been promoted to the New York office where he is working on sales of worsted fabrics.

J. Rollins Jolly, who has been superintendent of plant of American Thread Co., Dalton, Ga., has been promoted to general superintendent of Clark plants at Dalton and Tallaposa, Ga. **Dan Hurst**, assistant superintendent of Dalton plant, has been promoted to superintendent.

Clifford W. Brown, for several years superintendent of Arlington Mills, Lawrence, Mass., is to be appointed agent, succeeding **J. Sime Mercer**, who will continue with mills in advisory capacity. **Richard Stoehr** will be superintendent of finishing under **Ernest Johnson**.

Stephen A. Durkee has been appointed resident manager, and assistant manager, respectively, of Macon Textiles and Cedartown Textiles, Macon, Ga.

L. S. Fox, formerly general superintendent of Merrimack Mfg. Co., Lowell, Mass., has become associated with A. D. Juilliard & Co., New York, N. Y.

Herman L. Weisler has become associated with Barbet

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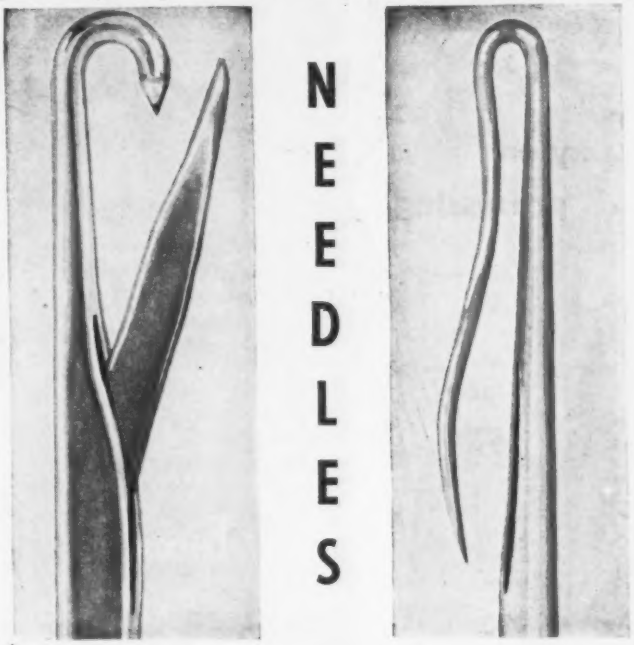

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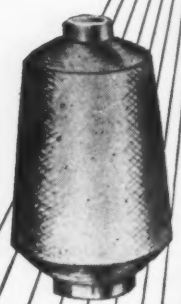

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Charles F. Rogers, Jr. — Manager

NEWS ABOUT MEN

Mills, Inc., Gastonia, N. C., as general manager of the knitted-fabric division. He recently resigned as director of operations of plant of Celanese Corp. of America, Hopewell, Va., where he was in charge of circular knitting, tricot knitting, dyeing, finishing, and woven-fabric finishing. He was instrumental in developing tricot knitting facilities at Tubize.

Leroy C. Zumpe is manager of new finishing plant of Waumbec Mills, Inc., Manchester, N. H.

Charles M. Shaffer, connected with May McEwen Kaiser Co., Burlington, N. C., for 9 yr., has been promoted to general purchasing agent of firm as successor to **Ralph M. Holt.** He will direct purchasing for all plants associated with company.

R. G. Boyer, agent of A. D. Juilliard & Co. mill at Olneyville, R. I., has retired because of ill health. **Needham Brown,** formerly superintendent of Shawsheen Mill of American Woolen Co., succeeds him.

Francis S. Nettleton, general superintendent of Hockanum Mills of M. T. Stevens & Sons Co., Rockville, Conn., has retired after 46 yr. of service.

A. E. Winslow is now research engineer at J. P. Stevens & Co., Inc., New York, N. Y. He was formerly chief engineer of Atwood Division of Universal Winding Co., at Stonington, Conn.

T. M. O'Neil, of Union, S. C., retired Nov. 25 after 31 yr. as superintendent of Monarch and Ottaray Mills, Union.

George M. Jolly has rejoined William Whitman Co., Inc., New York. He was associated with the company for 9 yr. prior to Jan. 1, 1946. At that time he became general manager of Unique Fibers, Inc., and president of Saxon Sales Co. Inc.

Cason J. Callaway, Jr., has been appointed as salesman in the Industrial Fabrics Div. of the New York office of Callaway Mills, Inc. He represents the third generation of the Callaway family to be actively associated with the Callaway organization.

Francis S. Nettleton, Rockville, Conn., general superintendent of Hockanum Mills of M. T. Stevens & Sons Co. has resigned as of Nov. 1, after 46 yr. with the company. Mr. Nettleton began with the company April 15, 1901, as an assistant designer, and concluded his services because of ill health. No successor has been named.

Arthur Nazarro has resigned as general manager of Grant Fabrics Finishing Co., Inc., Paterson, N. J., but will continue as consultant and technical adviser.

C. B. Bauldy is plant manager; **John T. Riley,** superintendent; **John Larkin,** overseer of twisting and winding; **P. D. Kaspar,** overseer of spinning; and **F. A. Snyder,** overseer of carding at Clark Thread Mill, Thomasville, Ga., new plant just starting operations.

C. W. Cashion has become general superintendent of Brookwood Mills, Taylorsville, N. C.

Marvin Mason has resigned position with Robbins Cloth Mills, Red Springs, N. C., and has become quality control technician for Dan River Mills, Danville, Va.

J. McGinstry has resigned as superintendent of Gay Bros. Co., Cavendish, Vt.

Robert Fritz, formerly assistant dyer at Continental Mill, Philadelphia, Pa., has been promoted to overseer of dyeing, succeeding **R. Bower.**

Corydon M. Grafton and Lawrence J. Patterson have joined the technical staff of Goodall Fabrics, Inc., Reading, Mass., division of Goodall-Sanford, Inc.

R. Jarvis is now overseer of carding for Vermont Textiles, Inc., North Montpelier, Vt.

Raymond Campbell is now overseer of carding for Union Wadding Co., Pawtucket, R. I.

L. W. Cartland is superintendent of Reading Cotton Mills, Reading, Pa., unit of Joseph Bancroft & Sons Co., succeeding **G. R. Goodwin,** resigned.

Paul A. Bonsaint is superin-

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NEWS ABOUT MEN

tendent at Webster Textile Mills, Laconia, N. H. He was formerly associated with Amoskeag-Lawrence Mills, Manchester, N. H.

Thomas Bryon is now overseer of carding at Draper Bros., Canton, Mass.

R. H. Dickson, formerly superintendent and manager of Clark Thread Co., Pelham, Ga., is now superintendent of Clark company unit at Acworth, Ga. **P. B. Stephens** is manager of Pelham plant; **M. V. Miltiades,** superintendent; and **E. E. Carter** night supervisor.

Lynton Drinkwater, formerly overseer of dyeing at Whittenton Mills, Taunton, Mass., is now with Colonial Processing Co., Pawtucket, R. I.

A. P. Dunn, assistant plant engineer, has left Pequot Mills, Salem, Mass., unit of Naumkeag Cotton Co.

J. T. Chalmers and **G. C. Cater** have been appointed superintendent and assistant superintendent, respectively, of Orr Mill, Anderson, S. C. Mr. Chalmers succeeds **Joe Lyon,** who has been made general manager of North and South Carolina mills of M. Lowenstein & Sons, Inc., New York, N. Y.

Willis W. Coates, formerly with Phoenix Mills, Statesville, N. C., has become overseer of finishing and dyeing at dye plant of American Yarn & Processing Co., Mount Holly, N. C.

M. T. Poovey has resigned as superintendent and manager of White-Tex Mills, Inc., Raeford, N. C.

Fred Pratt is leaving Providence Wool Combing Mills, Providence, R. I., to return to Champlain Mills of American Woolen Co., at Winooski, Vt., as superintendent of worsted yarn department.

L. M. Saxon has resigned as superintendent of Southern Spinning Co., Nashville, Tenn., and is now connected with F. Burkart Mfg. Co., Philadelphia, Pa., as general superintendent.

Walter Sullivan, overseer of worsted combing, has left Atlantic Mills, Providence, R. I., to go to Wood Worsted Mill of American Woolen Co., Lawrence, Mass.

S. M. Orr, Jr., has become plant engineer for Hanes Hosiery Mills Co., Winston-Salem, N. C. He resigned from engineering staff of Duke Power Co. to accept new position.

Jesse M. Jones has resigned as superintendent of Bath Mills, Inc., Bath, S. C., and has assumed new duties as superintendent of Brighton Mills, Inc., Shannon, Ga.

Obituary

John A. Moore, 69, treasurer and formerly president of Edenton Cotton Mills, Edenton, N. C., died Nov. 15 at Duke Hospital, Durham. He was also president of Sterling Cotton Mills, Franklinton, N. C. He was a former chairman of Carded Yarn Association, former president of North Carolina Cotton Manufacturers' Association, a former member of executive committee and board of directors of Cotton-Textile Institute, and a director of Institute of Textile Technology, Charlottesville, Va. He entered the textile industry at Henderson, N. C., where for a number of years he was secretary of Henderson and Harriet Mills. He was president of the Patterson Mills from 1917 to 1929.

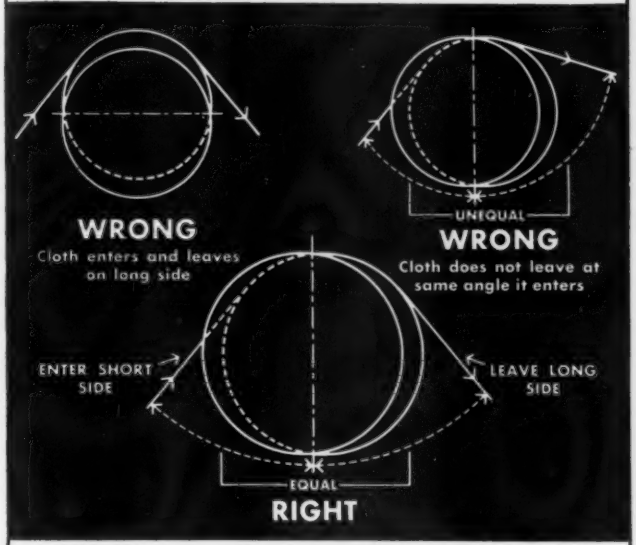
Ragon F. Ashe, president of Ashe Hosiery Mills, Knoxville, Tenn., died Nov. 20. He was son of the late John J. Ashe, founder of the mills. He succeeded his father as president upon the latter's death 10 yr. ago.

George Beverage of Atlanta, Ga., retired president of Banning Cotton Mills, Banning, Ga., died at his home in Atlanta, Nov. 26.

James Southwell, 76, president of the Southwell Combing Co., North Chelmsford, Mass., died Nov. 20.

Edwin Madison Allen, 75, former chairman of the board and former president of The Mathieson Alkali Works, died

Mount Hope Free-Wheeling EXPANDER



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There are many ways in which cloth can be led over this expander, but only one which will give the best results.

Shown above is a Mount Hope Free-Wheeling Expander with cloth going over it in three different ways. The first two methods are incorrect, because the cloth enters and leaves on the long or convex side in the first, and does not leave at the same angle at which it enters in the second. The third, and correct way, is to have the cloth enter on the short or concave side and leave on the long or convex side at the same angle at which it entered. This method alone gives maximum effectiveness to the Expander.

Advantages of the Mount Hope Expander, *if used properly*, are as follows: —

- **Because the warp is subjected to minimum tension less bow than usual is required, resulting in extra long life for the Neoprene surface of the expander.**
- **Expanders may be set at any desired angle to the cloth to adjust the amount of widthwise stretch produced.**
- **Ball bearings, grease packed, are securely mounted in steel spools to outlast many Neoprene sleeve coverings, and so designed that they cannot stick nor turn on the axle and cut it.**
- **This expander is suitable for all fabrics, including rayon marquisette and rayon and cotton tire cord, plastic film and paper.**
- **We will be glad to assist you, free of charge, with your cloth opening, guiding, or cross-stretch problem.**

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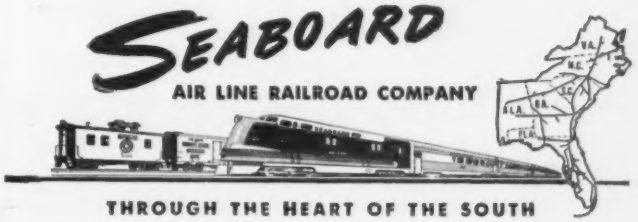

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WAK INDUSTRIES
CHARLOTTE, N. C.

NEWS ABOUT MEN

on Nov. 2 at his home in Rye, N. Y. He joined the company as president in 1919.

Charles H. Baird, 89, president of Paris Wincey Mills Co., Ltd., Paris, Ont., died recently. He was a grandson of one of the founders of the town of Paris.

George W. Watt, 87, died Nov. 20 at Norristown, Pa. He was president of George W. Watt Woolen Co., Norristown, Pa. and Heatherdell Woolen Co., New York.

C. Douglas Smiley, Jr., 56, vice president of Western Textile Products Co., St. Louis, Mo., and one time president of the company, died Nov. 15.

G. Charles Tate, 56, head of G. C. Tate Co., Charlotte, N. C., and formerly vice president of Railway Supply & Mfg. Co., died recently.

Alfred Schmalz, 49, president of Alfred Schmalz Mfg. Co., and treasurer of New England Plastics Corp., both of Boston, Mass., died in that city on Nov. 30.

Fred A. Decker, 60, vice president of Textile Specialty Co., Greensboro, N. C., died in November.

George E. Watson, 62, assistant secretary of Greenwood and Ninety-Six Cotton Mills and a member of the board of directors of the two mills, died Nov. 25 at his home in Greenwood, S. C.

T. Theo Howell, 65, general superintendent of Stowe Mills, Inc., and Pharr Worsted Mills, McAdenville, N. C., died Nov. 15. For a number of years, he was connected with Hartsell Mills, Concord, N. C., and for 3 yr. was superintendent of Linford Mills, Belmont, N. C.

A. Templeton Cloninger, 67, prominent York, S. C., textile manufacturer, died in Charlotte, N. C., Nov. 8. He was associated with his sons in the management of Neely Cotton Mills and York Mills, of York, as general superintendent. He had been engaged in textile manufacturing in North Carolina all his life.

Herman L. Frank, 69, former superintendent of Monarch Knitting Co., Buffalo, N. Y., died recently. In 1921 in partnership with the late Harris L. Mitchell, Mr. Frank organized the Mitchell & Frank Knitting Mill. The partners sold the business in 1926.

J. Gordon Bohannon, 66, a director of Hummell Ross Fiber Corp., Petersburg, Va., died recently.

Charles Pfeiffer, 69, textile engineer of Greenville, S. C., died Nov. 22. He was graduated from Philadelphia Textile Institute and went to Greenville 21 yr. ago. He was active in founding the Piedmont Plush Mills and later the Southern Pile Fabric Co., where he was superintendent for 16 yr.

Benjamin Franklin Fithian, 59, assistant secretary of Russell Mfg. Co., Middletown, Conn., died Nov. 5. Mr. Fithian had been with the Russell company for 12 yr.

Benjamin M. Brown, assistant vice president of Tennessee Eastman Corp., Kingsport, Tenn., died Nov. 5.

John O'Hare Walpole, 68, for the last 45 yr. a cotton buyer for Pacolet Mfg. Co., Gainesville, Ga., died Nov. 19.

George H. McCutcheon, 35, formerly purchasing agent for the Southern Div. of American Thread Co., Dalton, Ga., died recently.

D. A. Hoover, 65, Mt. Holly, N. C., for about 50 yr. with American Yarn & Processing Co., Mt. Holly, died Nov. 2.

George Samuel Dudley, 84, died at Milford, Mass., Nov. 13. He had been connected with the Draper Corp. for 53 years and was a department foreman.

A. Sam White, 78, Clayton, N. C., who had retired after 35 yr. as superintendent of Clayton Spinning Co., formerly Whitley Cotton Mill, died recently.

Carl Jackson, 61, cotton and flax expert for many years employed by Startex Mills, Spartanburg, S. C., died last month. He was associated with Pacolet Mfg. Co. for 15 yr. before joining Startex, and previously had been a cotton merchant at Abbeville, S. C.

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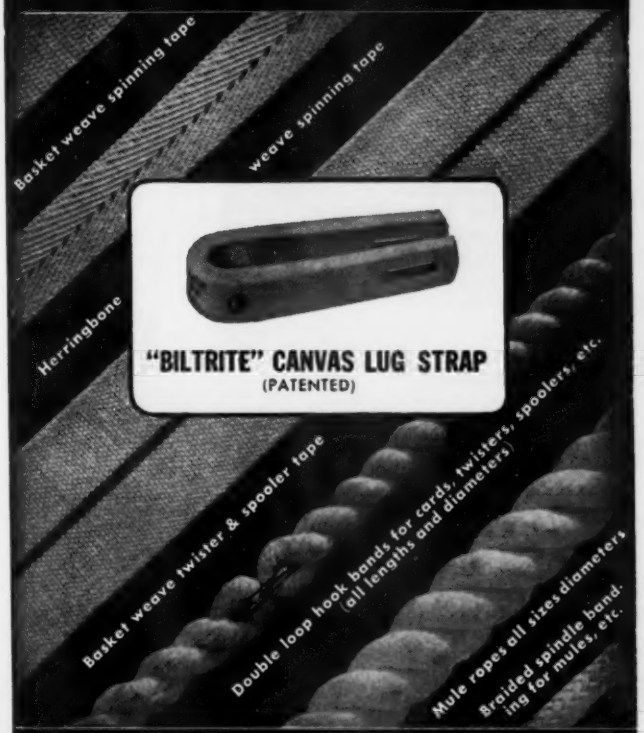
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The Circle-D, made only by Victor, is recommended especially for fine combed and special yarns. A Victor Service Engineer will be glad to help you cut costs in your mill with Circle-D Travelers, or help you select the *right* traveler for any fiber, any blend you may be running. Write, wire, or phone the nearest Victor office for prompt service.

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MUST HAVE MINIMUM OF BACHELOR'S DEGREE IN CHEMISTRY OR ENGINEERING INCLUDING TEXTILE TECHNOLOGY. COMMERCIAL DRYCLEANING EXPERIENCE REQUIRED; COMMERCIAL LAUNDERING EXPERIENCE DESIRED. LABORATORY AND PLANT DEVELOPMENT WORK; POSITION CARRIES TECHNICAL RESPONSIBILITIES FOR SEVERAL SPECIFIC PROJECTS ABOUT TO BE INITIATED. PERMANENT POSITION WITH EXCELLENT STARTING SALARY.

REPLIES CONFIDENTIAL. LIKELY CANDIDATES WILL BE INTERVIEWED AT OUR PLANT (EXPENSES PAID). IN BUSINESS OVER SIXTY YEARS. LIVING ACCOMMODATIONS AVAILABLE.

P-3189, Textile World
330 West 42nd Street, New York 18, N. Y.

Additional Selling & Business Opportunity Advertising on page 266

SEARCHLIGHT SECTION

ATTENTION

TEXTILE MILLS,

Dyers & Printers of Cloth

As exclusive factory Agents we have built up names and established business for manufacturers in different lands, and we offer the same services to you.

Negotiations are invited for your sole representation, where you have Exclusive Export Agents in the USA. We seek exclusive sub-agencies for these markets.

Principal bankers. Hong Kong & Shanghai Banking Corporation, Singapore.

Further bank and factory references furnished upon request.

THE UNITED AGENCIES
124 OWEN ROAD SINGAPORE
Cable address—"Agents", Singapore

WANTED

DAMASK MILL

WILL PURCHASE OUTRIGHT OR SUBSTANTIAL INTEREST IN COMPLETE SPINNING AND WEAVING MILL FOR MAKING COTTON AND RAYON TABLE DAMASKS.

B. O. 3385, Textile World
330 W. 42nd St., New York 18, N. Y.

FOR SALE

TEXTILE WATERPROOFING PLANT
Attn. Mfrs. Coated Cloth, Rubber and Paper

Equipment consists of Spread Coating, Sizing and Impregnating equipment with long drying space, two Coating Towers capable handling twelve bolts cloth at once; One Color Printing Machine with engraved rollers; Talc Dusting Machine; Cloth Winding Machines; Mixing equipment and tools. Complete laboratory containing Milling, Mixing, Testing and Weighing equipment. New York City. 14,000 Sq. Ft. desirable space. High Pressure Steam, 165 lbs. pressure available 24 hrs. per day. R. R. siding. Fireproof sprinklered building; explosion proof electrical equipment; low insurance rate. Attractively furnished offices. Present equipment can be economically converted from textile coating to other uses. **Will sell this plant as a whole or in substantial parts. This plant may be of interest to some foreign group for removal and operation abroad.**

BO-2742, Textile World
330 West 42nd Street, New York 18, N. Y.

CAMS

Our ROWBOTTOM cam cutting facilities are at your disposal for your cam requirements.

Let us have your inquiries.

BLOOMFIELD TOOL CORP.
38 Farrand St. Bloomfield, N. J.

WANTED •

TEXTILE PLANT

Large financially powerful diversified organization wishes to add another enterprise to present holdings.

CASH PAID

FOR CAPITAL STOCK OR ASSETS
Existing Personnel Normally Retained
Box 1222, 1474 B'way, N. Y. 18, N. Y.

WANTED

Commission Throwster

to throw high twist cotton yarn

CWW-3249, Textile World
330 West 42nd Street, New York 18, N. Y.

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LOCATED IN JERSEY CITY
Make Proposition
Call Cliffside (New Jersey) 6-1617-M Evenings

DYE SPRINGS

MANUFACTURED IN ALL THE METALS

EXPERTLY RE-WOUND AT A REAL SAVING

SOLD IN GOOD USED CONDITION

WALTER S. GATES

LAKE ORION, MICH.

WANTED

(Additional Wanted Ads on page 274)

FOR SALE

1 Stafford & Holt, 15", 6 feed, 6 cut,
1 Schneider & Fisher, 13", 6 feed, 8 cut
in perfect running condition.

FS-3399, Textile World
330 West 42nd Street, New York 18, N. Y.

PROFESSIONAL SERVICES

WANTED

DYESTUFFS

Chemicals—Pigments—Oils, Waxes—Solvents Wastes, Residues, By-Products

CHEMICAL SERVICE CORP.
80C Beaver St. New York 5
HAnover 2-6970

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Registered Patent Attorneys

Patent Practice before U.S. Patent Office. Validity and Infringement Investigations and Opinions. Booklet and form "Evidence of Conception" forwarded upon request.

Suite 448, 815-15th St., N. W., Washington 5, D.C.

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Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

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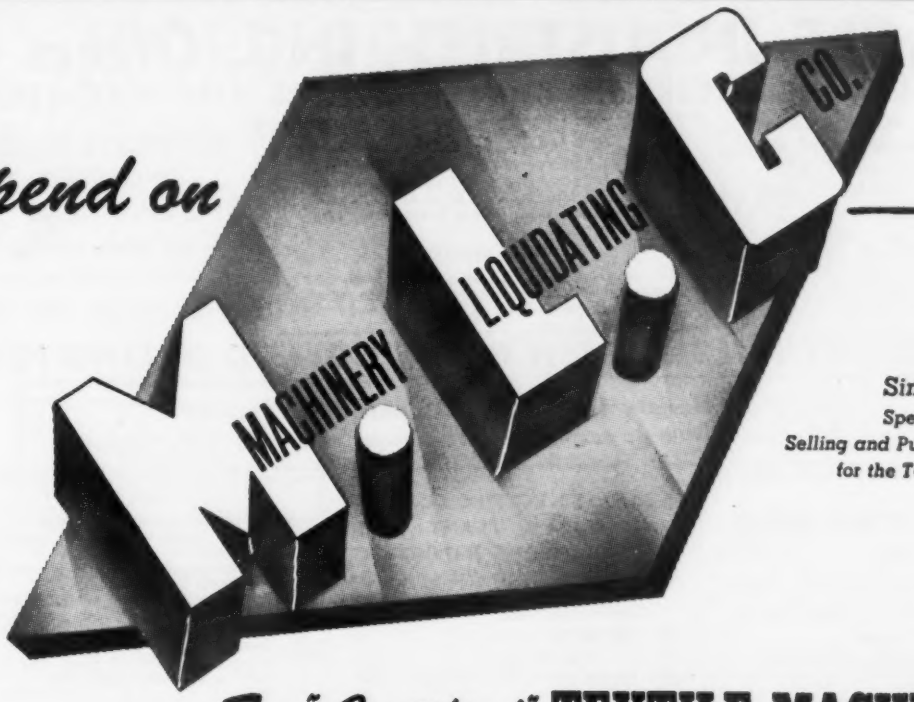

Since 1923
Specialists in
Selling and Purchasing Machinery
for the Textile Industry.

For "Certified" TEXTILE MACHINERY

1—64" P & W Doubling & Rolling-Up Machine with clock.

3—40", 42" E & H Flat Folders with take-up stands.

1—Rodney Hunt M3 2 String Fulling Mill.

3—60" Measuregraph Machines.

DYEING & FINISHING EQUIPMENT

1—72" C&M 2-cyl. Brushing Machine.
1—41½" Knit Goods Calender, stainless steel rolls, with motor Reeves drive.
1—65" C&M Dewing Machine, motor driven.
1—Set 8 Textile Vertical 48"x23" Copper Dry Cans.
3—60" Tolhurst Copper Basket Extractors.
3—80" D&F 20-roll single and double acting Nappers.
1—50" Padder, two rubber rolls, with barrel expander, motor driven.
1—44" Quetch, one rubber and one brass roll, stainless steel box, expansion pulley, motor driven.
6—52", 65½", 66" Voelker and Gessner Single and Double Bed Rotary Cloth Presses.
7—65½" P&W 2-blade Shears.

1—12 Pole Smith Drum Skein Mercerizer.

100—New Leland & Westinghouse ½ and 1 H.P. 3/60/220 V. Heavy Duty Motors.

1—76" Birch Measuring Perch, Ceiling Type.

3—80 Spindle Hopedale Band Driven Twisters 4½" Ring, 5½" Ga., Belt Driven.

COMPLETE MILL UNIT PROFIT OPPORTUNITIES

* A Six Set Woolen Yarn Mill.
* Six Set Woolen Yarn Mill with 50—75" and 4—82" C&K 4x1 automatic Looms. All machinery individually motor driven and reconditioned or purchased new in 1947.
* Fourteen Set Woolen Yarn Mill.
* A Woolen Piece Goods Finishing Plant.
* 3400 spindle Bradford System Worsted Spinning Mill.
* Six Loom Weaving Plant for Plastics or Wool—110" C&K 4x4, 25 harness Looms with accessory equipment.
* 2060 and 3092 spindle Cotton Mills. All machinery individually motor driven with new motors. Priced for quick sale.
* 5208 spindle Cotton Mill equipped with 21 Cards and Foster #101 Winder.
* 12,240 spindle Cotton Mill (Long Draft).
* 15,000 spindle Cotton Mill with reconditioned machinery including 61 Cards, auxiliary equipment and Winders.
* 105 Loom Narrow Fabric Weaving Plant for ribbons, tapes and labels, complete with warping, dyeing and finishing equipment.
* 30 Loom Label Weaving Mill.
* Complete Engraving Equipment for Textile Printing Cylinders with 15 Pantograph machines.

3—50 Spindle Linsey-Hyde Adjustable Reels.

1—210 Spindle Draper Twister 2" Ring.

2—8 String Hemmer Wool Washers.

LOOMS

50—40" Draper Model K 20 harness dobby Looms.
100—45½" reed space Model E Draper automatic Looms, with lacey tops, 3-bank stop motions, worm take-up, belt driven.
60—72" Draper Modified D 2x1 automatic Looms, 76" reed space, 16 harness head motions, motor driven.
12—82" R.S. Draper Modified D 1x1 automatic Looms, 16 harness, motor driven.
48—43½" B.S. C&K 4x1 automatic dobby Looms.
14—82" C&K 2x1 automatic Looms, 8 harness cam motions, motor driven.
8—92" C&K 4x1 automatic Looms, 8 harness cam motions, motor driven.
16—92" & 100" C&K 2x2 box automatic Looms, with Baker 3-mix attachments, 25 harness Gem heads.
6—110" C&K 4x4 box Looms, 25 harness, belt driven.

1—50 Spindle Foster Tube Winder.

9—100 Spindle Foster Model 12-12A-21A Tube & Cone Winders.

4—80 and 90 SP. Foster Model 30 Cone Winders.

MANY OTHER UNITS WITH PROFITABLE PRODUCTION POSSIBILITIES. PLEASE OUTLINE YOUR REQUIREMENTS. SEND FOR COMPLETE DETAILED LIST OF MACHINERY FOR SALE.

MACHINERY LIQUIDATING COMPANY

A Dealer of Recognized Reliability

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SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

• EAGLE INDUSTRIES, INC. *Offers* •

THE FOLLOWING EXCELLENT COMPLETE MILLS AND MACHINERY

PACKAGE DYEING PLANT COMPLETE WITH WARP DYEING EQUIPMENT IN EXCELLENT CONDITION. MAIN ITEMS (ALL OBERMAIER MACHINERY)

1—500 lb. stainless steel unit, motor driven.
1—600 lb. dyeing machine, motor driven.
1—300 lb. dyeing machine, motor driven.
Several sample package machines.

All the above equipped with electric hoist and trolley system.

DYE CANS

1 set—23 Butterworth Dry Cans, 84" wide, 23" diameter, bucket type, horizontally arranged. Driven by 5 h.p., 3 phase, 60 cycles, 220 volts. Complete with drive having a slip ring; complete set.

DYE JIGGS

16—Morrison Dye Jiggs, all stainless steel, 50" beam, rubber beams, direct motor driven, completely rebuilt in 1943.

COMPLETE WOOLEN and WORSTED MILLS

1—3 set card woolen
1—800 spindle Worsted Spinning
1—4 set Bradford Worsted Spinning
1—2 set Mill Woolen

1–COMPLETE TEXTILE, SCREEN PRINTING AND DYEING PLANT

Complete Hosiery Mill for Men's and Boys' Hosiery

60 "C" and "K-G" Scott & Williams Knitting Machines; diameter of cylinders is 3", 176 needles

COMPLETE COTTON MILLS

1—6,000 Spindle Spinning
1—17,000 Spindle; 10,000 Twister spindles
1—36,000 Spindles; 12,000 Twister spindles
1—6,800 Spindles; 250 looms
1—9,500 Spindles; 300 looms

COMPLETE TEXTILE COATING AND PLASTIC PLANT WITH THE FOLLOWING IMPORTANT ITEMS.

4—Coating machines
1—Hydraulic calendar
1—Embossing calendar
also mixing kettles, miscellaneous equipment.

MACHINERY

C&K 4x4 and 4x1 82" automatic and non-automatic looms, and 4x4 100" non-automatic looms.
1—50" soaper open width—4 compartments and one steam box.
1—National loop Dryer, 40' long, 84" wide
1—Van Vlaanderen Palmer and Quetsch Unit 66" face. Reevs drive and motor.
1—Van Vlaanderen Extractor, 54"
1—Morrison calendar, 2 paper and 1 steel roll, 500" wide, with motor.
1—Davis & Furber 60" x 60" Woolen card, with Peralta attachment.
3—Prince-Smith Twisters—188 Spindles.

ABOVE ALL FOR VALUE

Eagle INDUSTRIES INC.

110 WASHINGTON ST., N. Y. 6 WHITEHALL 4-7666
CABLE: EAGLENDUS

We Are Offering for Immediate Delivery

1—60" 3 roll K & G Calender, rebuilt
1—30' 60" VV Tenter Frame Complete with Reeves Drive and Stainless steel plate clips, totally enclosed gears and finishing cans.
2—50" Werner Dye Jiggs S. S. lined
2—56" Morrison enclosed gear copper lined Dye Jiggs
2—54" General enclosed gear S. S. line Dye Jiggs
1—set of 9—20" x 60" Heavy Steel Dry Cans
1—50" V. V. Button Breaker
1—36" motor driven self balancing Hercules Extractor
1—60" V. V. Motor Driven Horizontal Extractor
1—Motor Driven 20" Bock Extractor, reconditioned
2—60" motor driven beamers
3—60" motor driven Tubing & Measuring Machines
30-60 gallon copper Steam Jacketed Kettles
2—motor driven 84 spindle Fletcher Duplex Machines
3—No. 50 Universal Coners
1—U. S. 7½ H. P. Vari-drive #2, 3, 4 Reeves Drive
About 5,000 S. S. high speed V. V. Clips
Agitators of various sizes
Motors of various sizes
New & Used Electric Hoists.

Can Be Inspected at Our Warehouse

SHerwood 2-7666-7 LAmbert 3-0275

DOMESTIC **Moe Blank** EXPORT

TEXTILE MACHINERY

523-525 E. 18th ST. PATERSON 4, N. J.

FOR SALE

1 Textile 2-roll Hydraulic Calender

15 Jigs—6 of them Van Vlaanderen, 3 Henniken and 6 Morrison. The Van Vlaanderen hooked up in series of 3, driven by 3 h.p. motor. The balance are individual drive.

BEAUNIT MILLS, INC.
COHOES, NEW YORK

MILLER MACHINERY CO.
66 RAILROAD AVE. PATERSON, N. J.
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Used Textile Machinery and Supplies

BOUGHT AND SOLD
Warpers • Winders • Quillers
Looms

HOSIERY MACHINES
used and rebuilt
KNITTERS—RIBBERS—LOOPERS—
CYLINDERS—DIALS—TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
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FOR SALE
Repeaters, Lacers Card Cutters Jacquards of all description, also Plush Jacquards, Beamers
EUGENE SECKLER
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WE PLEDGE CONTINUED COOPERATION
HELPING INDUSTRY SAVE TIME AND MONEY

WE SELL . . . WE BUY . . .
SINGLE ITEMS TO COMPLETE PLANTS

"Consolidated"

Also, a number of Complete Plants for every phase of the Textile Industry.

55—C & K 4 x 1 auto. 85" Blanket Looms.
24—C & K 4 x 1 76" Looms.
2—Copper Steam Jack. Kettles, 200 & 250 gals.
1—Gessner 72" Full Decater.
2—Pin Tenter Frames, 50' long.
1—32" Roller Coater with motor.
1—66" Londonizing Machine.
NEW Water Softeners and Filters.
1—NEW Waldron Paper Coating Machine.
4—P-S & Halls & Stells Draw Boxes.
36—C & K 92" 4 x 1 automatic Looms.
12—C & K x 4 65" Looms.
14—New Whitin 40" Cards, 12" coilers.
3—D & F 3-cyl. 60" x 48" Iron Cards.
1—D & F 3-cyl. All Iron 48" x 48" Card.
2—Proctor & Schwartz Sample Cards.
3—D & F Mules, 288 & 375 spindles.
10—Whitin Twisters, 208 sp. 3¼" gau. 2½" ring.
4—D & F Woolen Frames 192 sp. 4½" gau.
5—Saco-Lowell Worsted Spinners, 288 sp.
6—C & K 72" Worsted Looms, 4 x 4.
20—Saco-Lowell & H & B Drawing Frames, 4 x 6 deliveries, 12" coilers.
2—Collins Trap Worsted Twisters.
2—Prince-Smith Twisters, 180 spindles.
1—Barber-Colman Warp Tying Machine.
60—Draper D 76" Looms, gem heads.
5—Draper x 40" Looms, with motors.
50—Draper x 60" Looms, with motors.
15—C & K 72", 76" Jacquard Looms.
3—Tape Condensers, 60" & 48".
17—Stafford Worsted Looms, 72", 82".
1—Hunter Lapper.
NEW Tubers, Beamers, Batchers.
1—V.V. Caustic Washer with G.L. Units.
1—Buhlman 120-arm Dyeing Machine.
1—Set 21 copper Cans, 88" face.
1—R. B. & F Single Color 50" Print Machine.
1—Butterworth 60" Clip Tenter Frame.
4—Whitin High Speed Tricot Machines.
2—Hussong Skein Dyeing Machines.
1—Tolhurst 60" Under-slung Extractor.
2—V. V. 65" S. S. Dye Jiggs.
1—Franklin Dyeing Machine.
2—Obermaier 500# Package Dyers.
4—Carbonizer Dryer Feeders, 60".
1—Complete Pantagraph Engraving Unit.
NEW Stainless Steel Dye Becks.
NEW Stainless Steel Dry Cans.
1—P & S 90" Airlay Dryer.
1—Birch Bros. Cloth Dryer.
1—Proctor & Schwartz Wool Dryer.
1—R. B. & F. 5-color 42" Print Machine.
1—4-color 60" Print Machine.
1—P & S Raw Stock Dryer, 6' Apron & Feed.
1—Waldron 3-color Printer.
8—Trop 48" Extractors, Open Top, direct motor drive.
4—Kidder Presses, 48"-66" cyls.

SMALL COMPLETE WEAVING PLANT, 4 x 1 & 4 x 4 82" Looms. NEW P & S Ceiling Condenser with conveyor aprons. 2-Color Laboratory Print Machine.

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NEW YORK CITY 15 PARK ROW NEW YORK 7, N. Y.

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Wanted—Your Idle Machines—Send List NOW

AVAILABLE IMMEDIATELY FOR SALE

USED EQUIPMENT

ITEM NL-13

Drafting Elements

10 x 4½ Cotton Roving Frame
For 128 Spindle—Model J3
Saco Lowell Frames
Enough to equip 2000 Spindles
1944 to 1945 Models

This includes all parts above the beam except Top Rolls, Trumpets & Operating Levers.

Used—but some a very short period.

ITEM NL-R

Roth Long Draft Cotton Spinning Attachments

For Saco-Lowell Frames

Enough to equip 10,000 to 20,000 Spindles less a few Miscellaneous parts.

Used—but some a very short period.

ITEM 12152

Stock Dye Kettle

Stainless Steel Lined, Tank 36" Diameter by 54" deep—Single Spindle.

ITEM 12264

Butterworth Pin Tenter Dryer

30' long — open type — maximum width 72". 2 Steam Boxes and 2 Heating Coils with traps.

ITEMS 12294 AND 12295

8 by 4 Saco Lowell Roving Frame

Cotton, 160 Spindle without drafting unit.

ITEM 12418

Coating Machine

72" Width Cloth Roll—Chain Drive.

ITEM R-B

Centrifuge or Vacuum Extractor

All Stainless Steel 60" Basket

Made by American Tool & Machine Co.—Includes special Louis Allis 15 HP motor on main drive and auxiliary 1½ HP motor for treatment at low speed of 30 RPM with cycle control for reversing at low speed.

ITEM N-H

2 Derby Doublers or Sliver Lap Machines

Making a 20" Lap

ITEM H-R

1—36 Spindle Foster Winder

Model 101 — Equipped with 18 Spindles for 70" Paper Tubes and 18 Spindles for Wood Tubes or Wood Cones—7" Traverse Foster Butterfly Type Slub Catchers.

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Sales & Salvage Department
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Upland, Delaware Co., Pa.
Phone—Chester 4167

AGER, Wood, Acid, New
AGER, Stainless Steel Acid
AGER, Tower, New
BEAMER, 60" Van Vlaanderen
BEAMER, 60" with steaming drum
BLOWER, New, Squirrel cage type
BLOWERS, R. C. 8 x 5 3/5" 350 cu. ft. per min.
BOIL OF TANK, 47"x72"
BUTTON BREAKER, V.V. spiral, 60"
BUTTON BREAKER, V.V. 50"
CALENDER, Kasterinsky 36" for knit goods
CLIPS, V.V. & W. & J.
DOUBLER, Windle, 60"
DRY Cans, set of 8, 72"x23" dia. horizontal
DRY CANS, set of 32, 50"x23"
DRY CANS, 7 Morrison 48" high pressure
DRYING DRUM, 61" face x 24" dia.
DRYER, P&S Loop, Revolving Sticks
DRYER, Van Vlaanderen 7 tier net
DYE BECKS, Stainless steel 4' to 20' New
DYE TUBS, 6' Wood complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Rochester Rotary 30" x 20", 3 pocket 20 lb. capacity
EXTRACTOR, 26" Amer. Motor
EXTRACTORS, Beam 50" & 60" BB
EXTRACTOR, K & G 48", rubber lined basket
FLAT FOLDERS, Elliott & Hall adjustable
FULLING MACHINES, L. F. Hemmer double line
HOISTS, Budget 1 ton ½ ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, 90"
MOTORS, ¾ to 5 HP AC/DC 220 volt
PAD, 2 roll 50'
PADDER, 90"
PALMER QUETCH UNIT, Butterworth, 54"
PRINT MACHINE, 10" sample or ribbon
PRINT MACHINES, 6, 7, & 8 Color 60", RB&S & Waldron
PUMP, Worthington Vacuum, 18x9 complete with 25 HP motor
QUETCH, 2 roll BB 50" & 60" ball bearings
QUETCH, 3 roll, 50" Morrison, motorized.
RIBBON FINISHING MACHINE
SCUTCHER, NEW
SEWING MACHINE, 60 ABB with 72" carriage.
SHEAR, Hermas, 4 knife 70" wide
TENTER FRAME, Pin W&J 30'x220" wide
TUBERS—Paterson variable speed motors
TUBER, V.V. with doubling attachment
WASHERS, slop, New Stainless Steel
WASHER, Steel, G.L. Type
WOOL WASHERS, J. Hunter 6'

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited

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Sherwood 2-6577

STAINLESS STEEL — COPPER — STEEL TINNED DRY CANS AVAILABLE

1—Set of 9 stainless steel cans, 128", roller bearings, Johnson joints, horizontal.

1—Stack 7, 9, 10—130" wide, steel tinned.

1—Set 43 cans, 90" wide, of which there are:
8—Horizontal stainless steel caps, Johnson joints, roller bearings.

1—Set 30 Steel Tinned Cans 120" wide Removeable Journals, Bucket Type Vertical-Swing Folder.

27—Cans steel tinned, removable journals, syphoned, vertical.

8—Vertical steel tinned, removable journals and buckets, with 90" swing folder.

SEPARATE OR COMBINED

Also TEXTILE FINISHING MACHINERY of all kinds

TEXTILE AUXILIARIES

Tel. DE 9650
DE 8837

15-17 ORMSBEE AVE.
PROVIDENCE, R. I.

FOR SALE

4—Barber Colman High Speed Warpers and Creels, 432 Ends Per Creel, Warper Model HW.
5—C & K Duck Looms, 1920 Model, Motor Driven with Motors. Will Weave 62" Duck Varying from 7 to 30 Ounces. Included With This Unit Are Two Cop Winders.
65—Platt Cards with New 12" Coilers, 24" Doffers, 106 Flats per Card, Wire Practically New.
8—Lowell Cards with New 12" Coilers, 28" Doffers, Wire Practically New.
60—Deliveries of Saco Lowell Drawing, 1923 Model, 4 Deliveries per Frame, 12" Coilers, Metallic Rolls, Spiral Gears, New Trumpets, Hank Clocks, This Drawing Has Just Recently Been Completely Overhauled.
44—Deliveries of Saco-Pettee Drawing, 12" Coilers, Metallic Rolls, 6—Six Delivery Frames and 2—Four Delivery Frames. This Drawing has Just Been Overhauled to Take Either Rayon or Long Staple Cotton.
3—Woonsocket Intermediates, 9x4½", 102 Spindles Each, Chain Drive, Ball Bearing Front Rolls.
9—Saco Lowell Tape Drive Spinning Frames, 3" Gauge, 224 Spindler per Frame.
1—Sipp Eastwood Magazine Creel, Over End Type, 720 Live Ends, Electric Stop Motion, Will Take a 4 Pound Package. This Creel Is Set Up For Rayon.
30—Rayon Beams, 24" Head, 12" Barrell, 54" Between Heads For the Above Creel.
1—Termaco Bobbin Cleaner, Adjustable For All Size Bobbins, Serial #F-525, Motor Driven With Motor.

SAM SCHWARTZ MACHINERY CORPORATION

P. O. Box 1461 CHARLOTTE, N. C. Telephones: 3-7764—3-7765

MACHINERY FOR SALE *Immediate Delivery*

6—C&K Silk & Rayon 4x4 Looms 54" Reed Space 20 Hook—Light Gem Head Motor Driven.
14—Draper 80" reed space Automatic loom 28 Battery Cam modern Modified D Individual motor driven ¾ HP motors Mechanical warp stop motions completely equipped.
9—Attwood 5B Twisters 2½ in. rings 100 spindle. Individual motor driven.
32—C&K 72" Automatic Bobbin changer, 2x1 silk & rayon looms, intermediate heads, 20 hook, motor driven, roller bearing, built 1925, 11,000 serial numbers.

MACHINERY CAN BE INSPECTED IN OUR WAREHOUSE

STAVE & ZISBLATT—Used Textile Machinery

106 KEARNEY ST. PATERSON, N. J. P. O. Box 1413
Phone ARmory 4-7486

NOW AVAILABLE

McDOWELL ASSOCIATES

ONLY A PARTIAL LIST

DYEING & FINISHING:

1—BATCHER, C&M type, 2-roll, 50" scrimp bar and friction windup.
1—BRUSH, C&M, 36", 2 bristle, and 2 batters.
1—BRUSH, McCreary, 2-roll, 54", blower, new clothing.
1—CALENDER ROLLING UP HEAD, C&M 48", 2 rolls, bored for steam, making batch 36" dia.
1—CALENDER, Friction, 3-roll, 43½" jackshaft, gear driven.
1—CALENDER, Textile, 3-roll, 100", top and bottom rolls heated.
1—Semi-DECATUR, P&W 72" x 12" dia. cyl., pump, motor, silent chain drive, used blanket.
1—DEWING MACHINE, C&M 66½", adjustable shield and deflector boards, brass disc spraying cyl.
1—DOUBLING AND FOLDING MACHINE, P&W Model F 66", with measuring clock.
1—Loop DRYER P&S 84", air fin heaters, insulated housing, motor driven.
1—NET DRYER, Van Vlan, 90" width, 7 tiers, fans, insulated housing, motor driven.
1—PIN DRYER, Hunter 70", insulated housing, double row pins, steam coils, motor driven.
3—HYDRO-EXTRACTORS, Tolhurst, 32", 48", 60", copper baskets, belt driven.
2—FOLDERS, E&H 40", one yard and 1¼ yard folds.
1—FULLING MILL, Hunter #20, 2 compartment stainless steel lined, motor driven.
1—ROLLING TEASEL GIG, C&M 1¼, 4-contact overhead folder, 1350 teasels.
1—NAPPER GRINDER, Roy, adjustable to 120" rolls with traverse grinders and side discs.
1—Van Vlan, INSPECTION AND REWINDING MACHINE 46", wood table.
1—Woonsocket NAPPER D.A., 96", 36-roll, steam drum, cone pulley adjustment, folder takeoff, good clothing.
1—Greene NAPPER S.A. 100", 12-roll, gear driven, folder takeoff, useable clothing.
1—Van Flan. PALMER 64½" face, 60" dia. cyl., adjustable stretcher, friction disc, motor drive, folder takeoff, used blanket, top drying cyl. 64½" x 24" dia.
1—Voelker Rotary Cloth PRESS 66½" double bed, rolling up head.
1—C&M Rotary Cloth PRESS 66½" double bed, folder takeoff.
1—Van Vlan. QUETCH 63", 2-roll, top roll rubber, bottom roll brass, size pan, friction drive.
1—SEWING MACHINE, Railway, C&M #23 with Merrow rebuild 60 ABB single thread head, MBB drive and motor.
5—SHEARS, C&M and P&W 45" to 66½", single and double blade units.

CARDING, SPINNING & WEAVING:

1—BREAST, Lombard 60" x 16" dia. cyl. metallic wire throughout.
5—Woolen CARDS 48x48, D&F 3-cyl. all iron, complete clothed, automatic feeders, rubb condensers.
3—CARDS, 60", D&F all iron 3-cyl., complete clothed, tape condensers.
2—Worsted CARDS, double cyl. 54x54, feeders, balling heads, fully clothed.
1—CLEANER & OPENER, Whitin Spirawhirl, 8 blade Buckley Beater.
1—Whitin Tape CONDENSER 60", Model C, 2 banks of single rubb, 48 ends.
1—Casheko Tape CONDENSER, 4 banks of single rubb, 120 good ends.
2—Card FEEDS, Bramwell 48" automatic.
9—Card FEEDS, Bramwell 60" automatic, Model A, 11" scale pan.
2—Warp Compressor JACKSPOOLERS, 48", 60 end, 4 figure pick counters, conversion rolls.
2—Schimmel MULES, 480 spindles ea., approx. 1¾" gauge, 30 end jackspools.
1—BURR PICKER, C&M, 24", with blower.
1—WASTE PICKER, Franke, 30" x 20" dia., feed rolls and feed apron.
1—PICKER, C&M 48" Fearnaught, hopper feeder, blower, etc.
1—MIXING PICKER, D&F 48", 6-bar, hopper feeder.
3—Whitin Wool SPINNING FRAMES, 168 spindles ea., 3¼" ring, 4½" gauge, tape driven spindles, individually motorized, V belt drive.
2—Whitin Wool SPINNING FRAMES, 180 spindles ea., 2½" ring, 4" gauge, tape driven spindles, individually motorized V belt drive.
1—Collins Novelty Yarn TWISTER, 192 spindles, 3" gauge, 2" ring, 2 sets of top and bottom rolls.
1—CONE WINDER Foster #30, 40 spindle, new type combination slub catcher and waxer, motor driven.
1—CONE WINDER, Foster #30, 60 spindles, same as above.
3—CONE WINDERS, Foster #30, 80 spindles, same as above.
2—CONE WINDERS, Foster #30—100 spindles, same as above.

LOOMS

8—C&K 4x1 automatic, 47" RS, motor driven.
24—C&K 4x1 automatic, 47" RS, belt driven.
60—DRAPER E, 28" 2-harness, belt driven.
120—STAFFORD, 44", belt driven.
36—DRAPER D, 82", 16-harness, motor driven.
11—C&K, 72" 4x4 box, 20-harness, motor driven.
18—C&K, 82" 4x1, 25-harness, motor driven.
57—C&K, 85" 4x1 automatic, 8-harness, motor driven.
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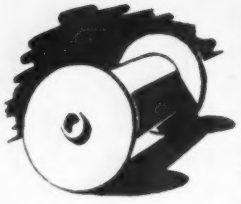

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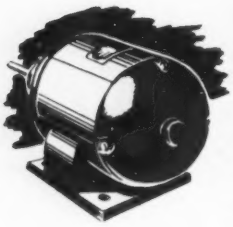

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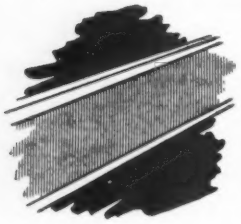

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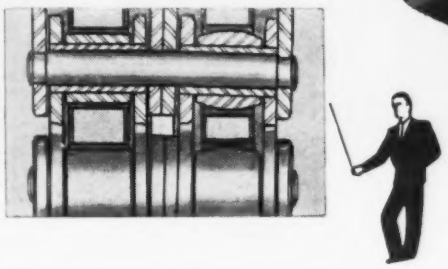

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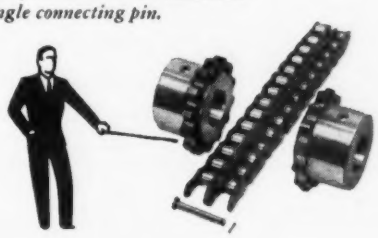

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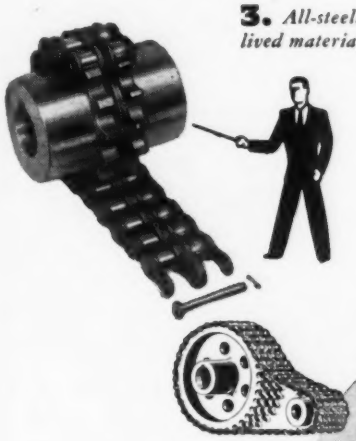

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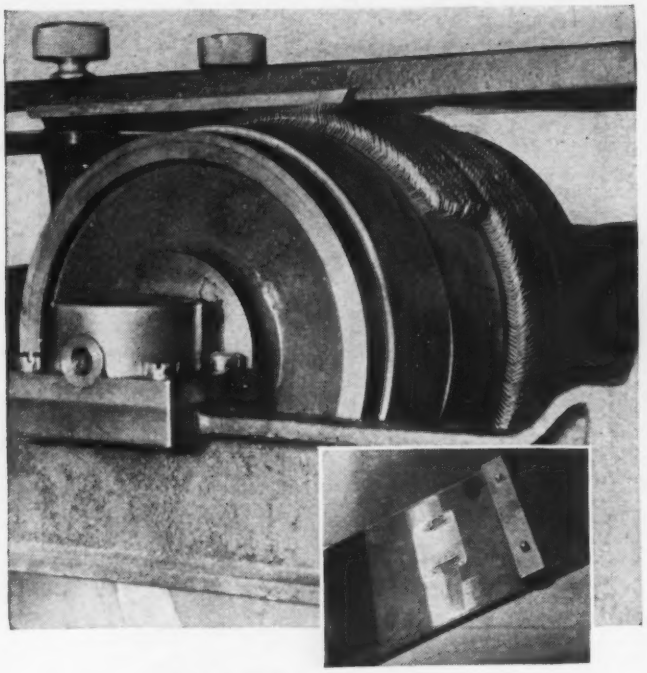

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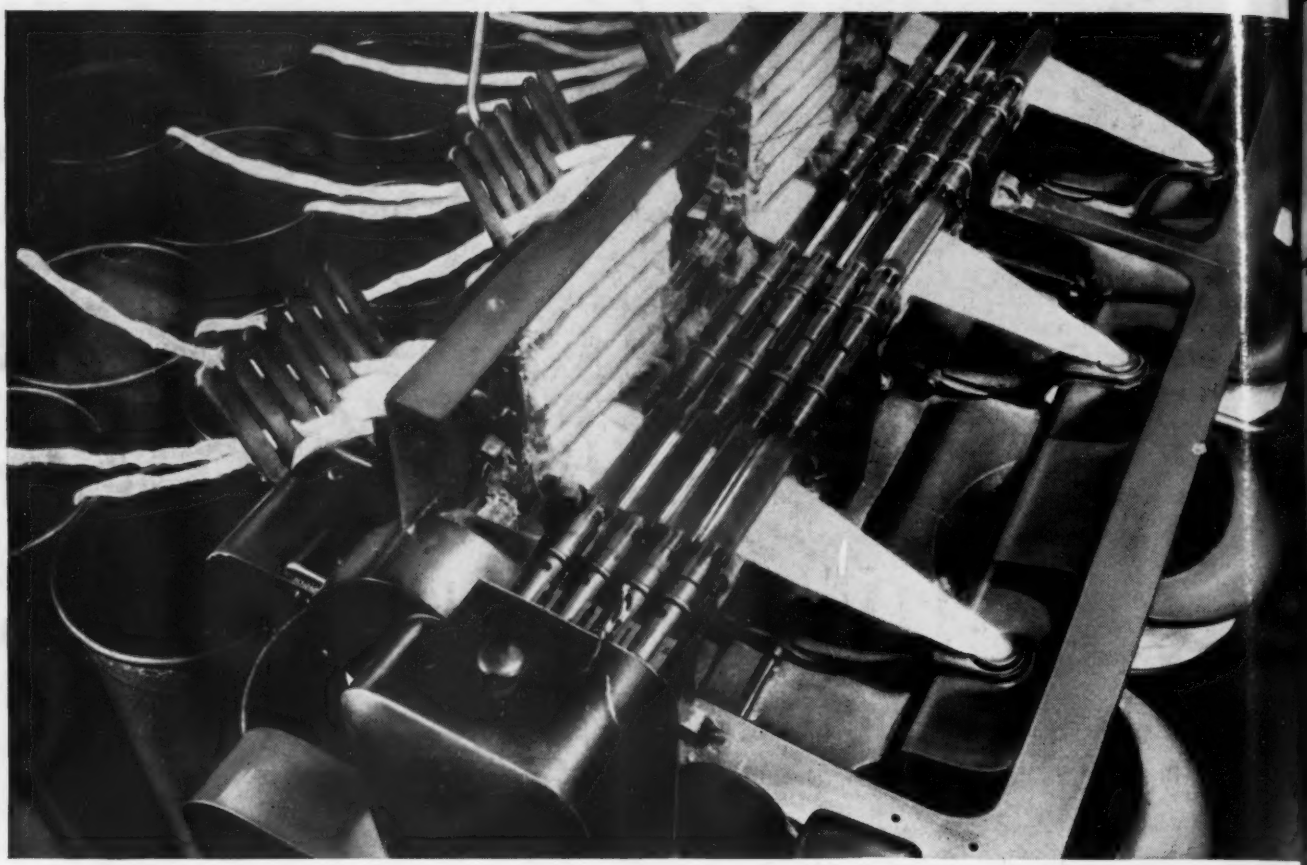

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